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IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1944

No. 1193

WISCONSIN ALUMNI RESEARCH FOUNDATION,
a corporation,

Petitioner,

vs.

VITAMIN TECHNOLOGISTS, INC., and
H. F. B. ROESSLER,

Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE NINTH CIRCUIT.

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Of Counsel.

THE TWENTIETH CENTURY PRESS, INC., CHICAGO

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Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE NINTH CIRCUIT.

To the Honorable the Chief Justice and Associate Justices of the Supreme Court of the United States:

Wisconsin Alumni Research Foundation hereby petitions for the writ of certiorari directed to the United States Court of Appeals for the Ninth Judicial Circuit in the above entitled cause wherein your petitioner is plaintiff, and wherein the District Court of the United States for the Southern District of California, Central Division, decreed validity

*This petition is not concerned with the dismissal as to individual liability of defendant Roessler.

of all claims declared upon of the three patents in suit, and decreed infringement of each of said claims by defendant Vitamin Technologists, Inc., which decree was reversed by the said Court of Appeals as against public interest in reference to limitation of licensing, and upon a finding of invalidity of all of said claims of all three patents, one of the Circuit Judges dissenting as to certain grounds for such finding.

The involved patents are for discoveries and inventions of Dr. Harry Steenbock relating to the antirachitic activation (production of Vitamin D, the antirachitic or rickets-preventing vitamin) of edible substances by treatment thereof with ultra violet rays. They are numbered, dated and entitled as follows, claims thereof which were declared upon being identified by their numbers:

No. 1,680,818, Aug. 14, 1928, Antirachitic Product and Process (Claims 1, 2, 3, 5, 6 & 8).

No. 1,871,136, Aug. 9, 1932, Antirachitic Product Essence and Process (Claims 1, 2, 3, 5, 6 & 7).

No. 2,057,399, Oct. 13, 1936, Antirachitic Product and Process (Claims 3 & 4).

Jurisdiction.

The jurisdiction of this Court is invoked under Section 240(a) of the Judicial Code (28 U. S. C. 347, as amended).

Decisions of the Courts Below.

Trial was had at Los Angeles in June and July of 1941, before Judge Cavanah of Idaho, sitting by special assignment. He delivered a written opinion October 1, 1941 (R. 57), filed October 3, 1941. This was followed by Findings of Fact and Conclusions of Law (R. 93) and Interlocutory Decree November 6, 1941 (R. 111). All defenses

were overruled, including a defense of unclean hands in connection with plaintiff's licensing activities (R. 79).

The Court of Appeals delivered its original opinions June 30, 1943, one by Judge Denman, with Judge Stephens' concurrence, and a separate one by Judge Healy dissenting in part. These original opinions were withdrawn by order of the Court of Appeals (R. 3304, 3306). They were ordered by the Court to be withdrawn from publication in the Federal Reporter (136 Fed. 2d, Page XXVI under heading "Cases Reported") but were published in the United States Patent Quarterly (58 U. S. P. Q. 293). Petitioner sought to have these opinions included in the record by so specifying in its praecipe (R. 3491), but notwithstanding this request, the Clerk omitted these opinions from the record because of their previous withdrawal (R. 3492). For the convenience of this Court, the original opinions of the Court of Appeals are reproduced and attached hereto as "Appendix A" to this petition.

The majority opinion of those originally filed construed the First Patent as an "attempt to monopolize a natural process". Judge Healy wrote: "I do not read the claims of his patents as broadly as the main opinion does".

In the superseding opinions filed November 24, 1944 (reported in 146 Fed. (2nd) 940), again by Judge Denman, with Judge Stephens concurrence, and a separate one by Judge Healy, Judges Denman and Stephens reversed themselves on this point (R. 3308, 3322), but held the claims of the First Patent to be anticipated "by the farmer in hay curing in the sun and the coconut grower sun-drying the cut meat of the coconut". Judge Healy disagreed as to the claims being "fairly subject to the criticism that they broadly include a monopoly of the use of sunlight" (R. 3341-2).

The withdrawn opinion of Judges Denman and Stephens held the First Patent invalid because "it was old in the art

to expose various foods of dietary value, such as olive oil and milk to lamp radiated ultra violet rays", but this is not repeated in their superseding opinion. The intervening petition for rehearing had shown it to be erroneous (R. 3351).

The withdrawn majority opinion interpreted each of two prior art publications (Hume and Smith (R. 3149) and Goldblatt & Soames (R. 3162)) as anticipating Dr. Steenbock's discoveries and inventions. Because of the failure of either of these publications to disclose the Steenbock inventions, a petition for rehearing challenged the interpretation. In the superseding majority opinion reference to one of the publications (Hume and Smith) is omitted altogether, and the erroneous reference to activation of "fatty flesh under the skin * * * in a sense, stored food," is also omitted, —this having to do with irradiation *in vivo,* to which the other publication (Goldblatt and Soames) relates.

In his separate superseding opinion Judge Healy repeats what he had written in his withdrawn opinion on the subject of both of these two publications, expressing the view that Dr. Steenbock did no more than to "interpret the results" of the described experiments, and so "did not invent anything".

The withdrawn opinion of Judges Denman and Stephens held the Second Patent invalid upon the "same reasoning" as applied to the First Patent (Appendix 7-8). This was not repeated in their superseding opinion wherein claims of the Second Patent were held to be invalid **solely because of indefiniteness,**—a defense not touched upon in the withdrawn opinion. The claims of the First Patent were also held to be invalid for the same reason.

Judge Healy dissented as to this (R. 3345). His view of the matter coincided with that of the District Court (R. 67, 68).

In the withdrawn opinion the Third Patent was held "void for a double attempt to patent an unpatentable process" (Appendix 8).

This is not repeated in the superseding opinion wherein the Third Patent is held to be invalid on a wholly different ground,—not touched upon in the withdrawn opinion, viz., laches (R. 3338).

In the majority superseding opinion, another defense not touched upon in the withdrawn opinion is supported, viz., "unclean hands", attributed in this majority opinion to petitioner's refusal to license oleomargarine manufacturers. Judge Healy did not then fall in with this, thinking, as stated in his separate opinion, "that we should confine ourselves to the issues actually presented by counsel," and this had not been one of them (R. 3341).

The oleomargarine subject had not been developed in the proofs and so petitioner brought motion to remand for the introduction of evidence upon that subject, supported by affidavit (R. 3411).

In denying that motion, all three judges concurring, the Court of Appeals held that the refusal to license irradiation of oleomargarine "warrants the refusal of the equitable injunctive and accounting relief sought" (R. 3485), albeit the respondents were not shown to have been affected in any way by petitioner's refusal to license oleomargarine irradiation,—their only interest having been in operating as petitioner's licensees were doing, i.e., irradiating ergosterol and yeast.

In the superseding opinion one other matter concerning petitioner's use of its patents was ruled adversely to petitioner, viz., its exclusively licensing Fleischmann Company to make and sell unactivated yeast and yeast products "for use as a source of antirachitically activated un-

saponifiable lipoids". This was held to be "a clear violation of the principle established in the Mercoid Corp. and Masonite cases". As stated by the Court of Appeals that contract "was assigned to Standard Brands, and many times modified". The Court then stated, "It does not appear that this provision has ever been changed" (R. 3317).

The superseded opinions had contained nothing of this, and petitioner, in its motion to remand, submitted documentary evidence (R. 3444) showing that the offending provision had been removed, and, by affidavit of Timothy Brown, that this provision had not been observed and that petitioner had not complied with it by requiring its licensees "to purchase unactivated products from the Fleischmann Company and subsequently from its successor, Standard Brands" (R. 3428).

This question had not been raised at all in the District Court, and so petitioner sought opportunity by its motion to remand to show the true state of facts which would establish that it had not (R. 3315):

> "• • • extended the monopoly of the patent over material not covered by the patent as in *United States* v. *Masonite Co.* and *Mercoid Corp.* v. *Mid-Continent Co., supra.*"

The denial of petitioner's motion to remand, however, deprived it of this opportunity.

Questions Presented.

Questions upon which your petitioner seeks review are as follows, with interpolations indicating reasons for their review by this Court, which reasons are elaborated in an appended brief:

Re Misuse of Patents:

1. Is a patent owner to be denied relief against an infringer who practices the invention as do licensees, simply

because the patent owner has refrained from licensing practice of the invention in another and unrelated field?

2. Specifically is petitioner to be denied relief against respondents for practice of the invention in irradiating (antirachitically activating) ergosterol and yeast, simply because petitioner had refrained from licensing irradiation of oleomargarine?

The subject to which above questions 1 and 2 relate was passed upon for the first time in the majority opinion which superseded the withdrawn original opinion. Judge Healy, in his "concurring" opinion disapproved, stating, "I think, though, that we should confine ourselves to the issues actually presented by counsel" (R. 3341). The issue in question was not one of them. In denying petitioner's motion to remand for introduction of evidence upon that issue, all three judges concurred in holding "that such refusal to permit such irradiation [of oleomargarine] warrants the refusal of the equitable injunctive and accounting relief sought by the corporation" (R. 3485).

Your petitioner maintains that both of these questions should be answered in the negative.

Re First Steenbock Patent Claims:

3. Is a claim which specifies "ultra violet rays, such as produced by a quartz mercury vapour lamp", invalid because ultra violet rays of sunlight had functioned to impart the antirachitic principle to organic substances of dietary value, when the specification of the patent expressly disclaims sunlight in stating, "**Artificial** light rich in the rays of the ultra violet region of the spectrum *is necessary*"?*

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*Emphasis ours as elsewhere in petition and brief unless otherwise specified.

4. Does the fact that petitioner once charged infringement by sun's rays, concentrated by artificial means, override the disclaimer of sunlight and also override a Patent Office record which shows that the patent was granted as for a process using artificial light rays and the product thereof?

There was disagreement among the judges of the Court of Appeals as to above questions 3 and 4; Judges Denman and Stephens answering them in the affirmative. Judge Healy took the same view as did the trial judge in answering in the negative.

Your petitioner maintains that this is the proper view and that the record demands a negative answer to each of these two questions.

Re First and Second Steenbock Patent Claims:

5. Is a broadly new process of treating a variety of substances to change their character legitimately claimable without specific limitation as to timing of treatment when that can be widely varied within limits broadly stated, so as to produce practicable results in varying degree?

6. Is a claim which expresses time of exposure as "for a period sufficient to effect antirachitic activation but so limited as to avoid subsequent substantial injury of the antirachitic principle", invalid for indefiniteness because economic results or dietary efficiency would vary according to the period of time during which the substance was subjected to the action of the ultra violet rays?

Again the judges were in disagreement, Judge Healy dissenting from the majority opinion's negative answer to

above question 5 and its affirmative answer to above question 6, and taking the same view as the trial court.

Your petitioner maintains that question 5 should be affirmatively answer and that question 6 should be negatively answered.

Further re First Patent:

7. Is a patent upon a discovery, which markedly contributed in eradicating a centuries-old malady widely suffered by mankind, invalid for anticipation by a prior printed publication not disclosing it but expounding a since-exploded remedial theory—simply because the reported results *might* be attributable to something *unrecognized* by the authors and dependent upon conditions *unrevealed* by the publication, and so subject merely to surmise, conjecture, or speculation?

8. Specifically, was the claimed process of imparting antirachitic properties to organic substances of dietary value by timed exposure to artificially produced ultra violet rays, anticipated by a publication which dealt solely with exposure of *air* to such rays, afterwards shown to impart no antirachitic property to the air, but which gave rise to speculation as to what could account for the published results,—one such speculation being that *if* sawdust, mentioned in the publication as bedding for rats in jars *to start with*, should be left in the jars when the rats were removed and should stay there when the jars were put under the ultra violet lamp, and so *might* have antirachitic properties imparted to it, then, when the rats were put back in the jars, an improvement in their condition, such as reported in the publication, *might* be accredited to their having eaten the sawdust?

9. Was the claimed process of imparting antirachitic properties to organic substances of dietary value by timed exposure to artificially produced ultra violet rays, anticipated by a publication which described subjecting *live* rats to artificially produced ultra violet rays, removing their livers and feeding the same to other rats with resultant improvement in their condition, considering that ultra violet light rays do not penetrate the skin and so the livers cannot be acted upon by the rays but must have the antirachitic property imparted to them in some unknown way as in the case of the codfish?

The three judges substantially concur in answering the foregoing questions 7 to 9 affirmatively. Your petitioner maintains that the answer to each of them should be negative in accordance with the trial court's opinion and decree.

Re Third Steenbock Patent:

10. Is a divisional patent invalid because the claimed invention had been disclosed in a printed publication more than two years before the divisional application was filed, no intervening rights having arisen between the filing date of the parent application and the filing date of the divisional application?

The three judges concurred in an affirmative answer to above question 10. Your petitioner maintains that the answer should be negative in accordance with the trial court's opinion and decree.

CONCLUSION.

Your petitioner submits that, the writ of certiorari should be granted because of the divergence of views expressed in the opinions below as to most of the questions propounded, and because of their importance, and because of the importance of the remaining questions as to which the three judges of the Court of Appeals were in accord, as well as because of conflict between the decision of the Court of Appeals and previous decisions of this Court. All of this is enlarged upon in the appended brief.

Respectfully submitted,

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WARD ROSS,
Of Counsel.

Dated April 21, 1945.

BRIEF IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI.

Before proceeding with discussion of the specific questions put in the foregoing petition, we think it advisable to present the subject matter of the patents in suit with an historical review of what led up to Dr. Steenbock's "truly remarkable conception in the then state of knowledge", to quote Judge Healy in his "concurring" opinion (R. 3343), and with a word as to public benefits that were conferred by that conception, and as to the manner in which the patents in suit have been administered by petitioner.

Introduction.

The three Steenbock patents in suit relate to a means for the cure and the prevention of rickets. The disease is a serious one, since it is an impeding of skeletal development. In rickets there is a poor utilization of the minerals calcium and phosphorus (R. 1301). Thus the bones cannot be normally formed (R. 1301). In man this disease occurs principally among infants before two years of age (R. 142, 1301). In humans this is the period of most rapid growth (R. 1301). The more rapidly bones are growing, the more likely is rickets to occur (R. 1301, 3111-12). The external deformities occasioned by the disease are sometimes appalling. Illustrations presented by Dr. Jeans, a pediatrician who serves widely, and who, among other responsibilities, acts as Special Consultant of the United States Public Health Service (R. 1296-1299), show some of the more extreme external manifestations of the disease (R. 2358-2359).

The disease of rickets has long been known. Dr. Glisson, in 1650, described most of the symptoms known today (R. 143). However, only recently has the cause of rickets been

demonstrated (R. 144). Beginning more than two centuries ago the Scandinavians used cod liver oil as a remedy. More than a century ago a German journal reported observations on the treatment of infants with cod liver oil and concluded that it was a specific for the prevention or cure of rickets (R. 144). However, as late as 1905 the American Medical Association's journal published an article by the Secretary to the Council on Pharmacy and Chemistry declaring that there was no evidence that the fats of cod liver oil possessed therapeutic qualities, and asserting that most pharmacologists believed that whatever virtue there was in cod liver oil depended on its qualities as an easily assimilable fat (R. 145). It was considered to be only a food (R. 144-145). Up to 1915 these views of the Council on Pharmacy and Chemistry had not much changed (R. 145).

Shortly after 1915, a number of studies developed important information in respect to rickets; but none of them, save his own, led to Dr. Steenbock's inventions. As the District Court found, there was no knowledge extant prior to Dr. Steenbock's discoveries that organic substances, deficient in Vitamin D, could be activated antirachitically by ultra violet light (R. 101-102).

It is now known that it is Vitamin D that functions in the body to aid in the assimilation of the minerals calcium and phosphorus in the diet, and thus build strong bones and teeth (R. 142-3, 1300-01, 1307). Dr. Steenbock did not discover this vitamin. He did make a vastly important contribution for the cure and prevention of rickets by producing in foods and medicines Vitamin D through the treatment of them by ultra violet rays for a period sufficient to effect antirachitic activation but so limited as to avoid subsequent substantial injury of the antirachitic principle. The First Steenbock Patent in suit relates to

this. The Second Steenbock Patent relates to an essence and to a concentrated antirachitic compound—comprising unsaponifiable lipoids* separated from a substance rich therein, activated with ultra violet rays—of particular importance for medicinal use in the cure and prevention of rickets. And the Third Patent is concerned with antirachitically activated yeast. These three patents are concisely described in the District Court's opinion (R. 60-66).

Dr. Steenbock was a pioneer. His contributions are pioneer inventions. The record abundantly supports this. There is no contrary evidence. The District Court was wholly correct in finding, after hearing and examining the great mass of evidence on the record, that (R. 102)

> "When Dr. Steenbock made the inventions of the three patents in suit he opened a new field, *founded a new art* and rendered possible the production of new sources of Vitamin D in the diet. Prior to the making of Dr. Steenbock's inventions the only recognized edible antirachitic substance was cod liver oil. Dr. Steenbock thus produced new results in providing in medicines and foods through the use of ultra violet rays, Vitamin D for the prevention and cure of rickets in mankind and animals."

That Dr. Steenbock was the founder of this new art; that he, and not some other seeker for better means to prevent and cure rickets, was the inventor, is understandable when the history of his work is known.

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*Edible fats and oils are spoken of collectively as fats by the chemist and differentiated only on the basis of whether they are solid or liquid at ordinary temperatures. When a fat is treated with an alkali, such as household lye, all except a small percentage is converted to soap. The remainder, the unsaponifiable fraction, can be extracted from the mixture by a solvent such as ether in which the soaps are insoluble. This fraction contains the "unsaponifiable lipoids" of the fat and is similar to fats in its physical properties but differs chemically. The composition of the unsaponifiable fraction is determined by the fat from which it is prepared (R. 187-9).

There were urging facts to spur any searcher. Nothwithstanding the capabilities of cod liver oil, and of ultra violet light directly applied to the bodies of children in the fight against rickets, rickets continued to be a highly prevalent disease among children, as was pointed out in the specification of the First Steenbock Patent, for which application was made June 30, 1924. Dr. Park, in an article (Def. Ex. E-18, R. 3069) published eight months before Dr. Steenbock's invention of the First Patent in suit, stated that:

> "One can say that rickets is so common in the large cities of America and Europe that few children among the poorer classes are untouched by it".

Dr. Steenbock's Background in Contrast With That of Other Investigators.

Dr. Steenbock studied in the College of Agriculture of the University of Wisconsin beginning in 1904. He graduated in 1908. He specialized in chemistry. From 1908 until 1912 he served as an assistant in Agricultural Chemistry at the University of Wisconsin. He taught and did research work along the line of animal nutrition. The problems with which he was connected dealt primarily with the utilization of inorganic elements by animals (R. 791). He did post-graduate work at Yale in 1912 (R. 792). There he specialized in Bio-Chemistry or Physiological Chemistry (R. 792). In 1916 he received his Doctor's degree at the University of Wisconsin (R. 792). Also, in 1913, he studied in natural science fields in Germany (R. 793-794). At Wisconsin he successively became instructor, assistant professor, associate professor, and full professor in the field of Agricultural Chemistry (R. 794-5). He was interested in the metabolism of animals (R. 794-5). The series of notebooks which he started in

1917 number several hundred (R. 803). His animal experiments and feeding tests recorded up until the filing of his first patent application, June 30, 1924, involved the use of approximately 5,000 animals (R. 804).

His interest in lime, or calcium, and in phosphorus in animal metabolism is shown in many published articles of record. Plaintiff's Exhibit 1, an article by Steenbock and Hart, received by the Journal of Biological Chemistry, January 4, 1913 (R. 1853), well illustrates some of his earlier work. Its first sentence reads—

> "A question which has baffled pathologists for a long time, and one which is not yet in a fair way of solution, is the cause of specific bone diseases known as rachitis, osteoporosis, and osteo-malacia, diseases which are all characterized by an impoverishment of the bones in inorganic substances."

This early interest in the nature of rachitis—or "rickets," as the disease is commonly called—discloses that Dr. Steenbock acquired a conception of it that was not had by other investigators. The doctors and investigators who saw rickets in children, with its gross deformities, and who gave their attention to the study of Vitamin A, which was known as early as 1913 and continued to be known as the "growth" vitamin, seemed not to have had the approach acquired by Dr. Steenbock—not only in respect to young, rapidly-growing animals, but also in respect to adult cows, pigs, goats and other animals of the farm. A very general idea of the nature of that work over several years can be obtained from the titles in the index in Volume I of the Record, pages V to XII.

Dr. Steenbock and his associates were not the only ones working upon rickets. In 1919, Dr. Mellanby, in England, conducted investigations on rickets in growing puppies. He found certain fats effective. Butter fat was usually

helpful, but not nearly so much so as cod liver oil (R. 145-146; the Mellanby Article, Def. Ex. E-2, R. 2936-38). He found most of the vegetable oils ineffective. The dogs that ran out of doors did not develop rickets. Findlay and Paton concluded that hygiene, exercise and fresh air were important in preventing rickets (R. 146, 2946-47). Huldschinsky, in Berlin, observed that rickets in infants could be cured by exposing them to the light of a quartz mercury vapor lamp (R. 146; Def. Ex. 3, R. 2955-58). Dr. Alfred Hess of New York had noted that rickets was more frequent in the late winter and early spring months (R. 146-47).

None of these investigators, or the many others, had the background of experience with animals, both young and old, that was Dr. Steenbock's. In their interest in Vitamin A, and their studies of growth as related to that one vitamin, the sound approach to the real cause of rickets escaped them. An illustration of futility is found in the work of Goldblatt and Soames as late as 1923 (Def. Ex. E-21; R. 3162-75). They did find a growth-promoting factor in rat livers taken from rats that had been skin irradiated in life. Their work went no farther than to again present the mystery found in the storage of what is now known to be Vitamin D in the liver of codfish. Their observations left it a mystery. It is still a mystery.

Another illustration is found in the work of Hume and Smith at about the same time. They also concerned themselves with growth as promoted by ingestion of Vitamin A. Their report makes no mention of rickets. What they undertook to demonstrate was that growth of rats fed on a diet deficient in fat-soluble vitamins (Vitamin A) would be promoted by inhalation of irradiated air. It was later proved that they were wrong, so that their publication (Def. Ex. E-20, R. 3149) contributed nothing whatever to

the solution of the rickets problem or even to the growth problem with which they were dealing. The whole subject was still shrouded in mystery, as Goldblatt and Soames left it.

In 1913 it had been found that certain fats contained substances necessary for the growth of experimental animals—such as the rat (R. 140). By 1914 Vitamin A had been found in cod liver oil (R. 140). In 1924 Steenbock and Nelson (and this was after the beginning of the particular experiments by Dr. Steenbock which on their conclusion suddenly illuminated the darkness with his important invention covered by the First Patent in suit) established that there were two distinct vitamins, A and D, in cod liver oil (R. 152). Goldblatt and Soames seemingly had not even suspected this. These investigators believed that the mystery related to the presence of Vitamin A in the liver of a living rat. Their observations respecting their experimental rats were concerned with growth alone. Growth was considered a condition for the production of rickets. Therefore, growth alone could not prove the absence of rickets. The aforesaid Goldblatt and Soames article concludes that

> "The correct explanation must await the results of further studies on the *nature of the fat-soluble growth-promoting factor* as well as on the *site and mode of its action*" (Def. Ex. E-21, R. 3174).

The action of artificially produced ultra violet light upon a live rat was no more the Steenbock discovery and teaching than was the known direct ultra violet light treatment of a child. It was not the discovery that an inert organic substance of dietary value could be directly irradiated by artificial means so as to potently acquire an antirachitic property, available for the prevention and the cure of rickets.

In fact, Dr. Steenbock back in 1913, though his final inventions were far in the future, was as near the inventions of his patents as were such investigators as Goldblatt and Soames in 1923, or as were Hume and Smith in that year. As early as 1913, in work in which Dr. Steenbock engaged with Professor Hart, is was found in connection with some experiments conducted with cows and goats relating to loss of lime with certain rations (R. 472):

> "After one of these experiments had been concluded with the demonstration that one particular goat was losing considerable quantities of lime from its skeleton, the animal was turned outside and allowed to run on pasture, and then it was brought back into the laboratory, and its lime balance studied as before. It was found that now the goat retained lime on exactly the same ration on which it had formerly lost lime, and it was surmised then that some agency which had been operative while the goat was out of doors had produced the change in result."

In 1918, Dr. Steenbock was doing research on Vitamin A. His inquiries concerned its occurrence, stability, separation and storage, and the relation of this to ophthalmia, an eye difficulty, and growth (R. 475-78).

About 1921 he returned to the studies that had earlier been made by him in respect to goats and cows, concerning the deposition and loss of mineral salts (R. 473). Up until this time (1921) the reports of others concerning the action of ultra violet light, and the study of rickets and vitamins, as far as disclosed by the record, present only this:

In 1910, Seiffert had sterilized milk (Def. Ex. E-1). In 1913, 1914 and 1915, others were sterilizing milk, as shown in Defendant's Exhibits D-1, D-2, D-3 and D-5 (R. 2875, 2883, 2895, 2903). In 1919, Huldschinsky, as shown by Defendant's Exhibit E-3 (R. 2955) was treating rickets in infants by direct irradiation with ultra violet light. In the

same year, Zilva, as shown by Defendant's Exhibits E-4 and E-8 (R. 2959, 2990) learned that ultra violet light destroyed the Vitamin A in butter, but did not destroy the Vitamin B of yeast or the Vitamin C of lemon juice. In that same year, Mellanby (to whom we have already referred) was doing his experiments on the feeding of oils to prevent rickets in dogs.

In 1921, Steenbock was working with cows on various rations. In some instances these rations included grass; in others hays cured in the sun, and also hays that had been cured under canvas to exclude the sun. In some instances the cows were given cod liver oil. As he testified (R. 473):

> "The results of these experiments were hardly consistent. It was found, for example, that grass in the ration improved or increased calcium retention. Timothy hay which had been cured out in the sun did not improve calcium retention. Alfalfa hay which had been cured out in the sunlight under canvas covers did improve calcium retention. And cod liver oil always improved calcium retention. So, as a result of these experiments, we could hardly come to any definite conclusion, except that hays were very variable in their effects."

This is one of the many illustrations that emphasize the inconsistencies in the observations made during the long searching period, and that may now be viewed in retrospect in the light of the revelations of the Steenbock inventions.

Others worked in this field. In 1922, Hess cured infantile rickets by using sunlight and the rays of the carbon arc on the patient. Also there were instances in which he cured rickets in rats by feeding them cod liver oil, and by exposing the rats to artificially produced ultra violet light and sunlight. This was the same year that Goldblatt and Soames did some work in respect to Vita-

min A—with no disclosures that relate to the Steenbock inventions (Def. Ex. E-17, R. 3057). In this year Miss Hume did certain work concerning Vitamin A (Def. Ex. E-16, R. 3043). In the same year, 1922 (Def. Ex. E-13), Drummond published on the Vitamin A in the unsaponifiable fraction of cod liver oil (R. 3028-41); and Zucker found an antirachitic factor in the unsaponifiable fraction of cod liver oil (Def. Ex. E-15; R. 3042-43). In the same year, Chick, as shown by Defendant's Exhibit E-11 (R. 3002) treated infantile rickets by sunlight and also by artificially produced ultra violet rays through direct application to the patient, and by the administration of cod liver oil. Also McCollum, as shown by Defendant's Exhibit E-10 (R. 3001), found that rats could be cured of rickets by cod liver oil which had been freed of its Vitamin A content.

In 1923, the only material appearing in the prior art of record not hereinbefore mentioned, was the work of Dr. Hess in respect to the wave lengths effective in the cure of rickets in rats by the direct application of ultra violet light (R. 3146). Early in that year the Park articles appeared (Def. Exs. E-18 and E-22; R. 3066, 3176), the last of which disclosed that cod liver oil increases the calcium and phosphorus content of the blood.

Looking at the whole story of the work of others than Steenbock, without the illumination of the disclosures of the Steenbock patents in suit, it is wholly without significance in showing or approaching any of the Steenbock inventions. It is eloquently significant that these many searchers did not find his rickets remedy. The District Court so found. The scientists of the world, by the disclosures of their own publications, so proclaim. They published accounts of their efforts. In all of these no scientist found,

or claimed to have found, what Steenbock discovered. Steenbock had before him, presumptively (and actually, in most cases, as the record shows), the reports of the work of others, as they had the reports of his work. Hume and Smith thought they had discovered merit in the activation of air. Steenbock, with the assistance of Dr. Nelson, tried this. It did not work (R. 2225). They tried the activation of screens and of the cages in which rats were kept. It did not work (R. 2240). Hume and Smith's publication led away from, instead of toward, the Steenbock result. But even before this, Dr. Steenbock, with the assistance of Dr. Black, started a line of experiments. There was in them little to confidently hope for. Steenbock had begun in 1908 in the general field of mineral retention in animals. It was now 1923. The experience of fifteen years of inquiry was with him. He had a concept of rickets that differed from that of others—not as to its effects; they were everywhere observable; but a concept as to its cause—and this was not simply the absence of calcium and phosphorus, but of *some agency that controlled their use in the making of bone tissue.* The agency was not a special intruder among the young, as it seems he alone fully realized, but one that somehow worked in adult goats, pigs and cows, as well as in young animals. How could it be created and captured, and made available for controlled administration?

No one else had the background of observation and experience possessed by Dr. Steenbock. It had been generally assumed that rickets did not occur in adult animals. He did not concur in that assumption; and thus he was to draw from his experience with older animals conclusions which others felt were not justified (R. 505, 540, 654-58).

In examining Dr. Steenbock's important work in 1923, it should be borne in mind that the concept of rickets seem-

ingly held by his contemporary investigators was one in which the presence of the disease was believed to require—(1) gross deformity; (2) histological or X-ray pictures of abnormal bone structure; (3) low ash content of bone; (4) low inorganic phosphorus in the blood; and (5) low phosphatase (enzyme) content of blood (R. 504-08). Steenbock's approach to the disease, and his concept of it, was in terms of the disease's mechanism, and not merely the usually-observed symptoms. Thus it was to be diagnosed by—(1) excessive loss of calcium from the body, which goes back to the using of the observations made in his studies with animals beginning in 1908, and the significance of which seems not to have been appreciated by others, notwithstanding the Steenbock publications; (2) the failure of growth in the young in the absence of a Vitamin A deficiency—and this due to the storage of Vitamin A in the animal body or the presence of Vitamin A in the ration consumed. This is brought forth in Dr. Steenbock's testimony (R. 505, 657-58, 732) and Dr. Black's testimony (R. 428-29). Also Dr. Steenbock established that in the adult animal there were operative the same factors effective in producing normal bone calcification, as in the infant, but that the manifestations most obvious to the eye were different in the infant from those in the adult, because of the pronounced resulting deformities; also that in the young, in spite of an ample intake of calcium and phosphorus in the diet, growth could not proceed without bone calcification; and further that both in the adult and in the young the same calcifying factor, which is now identified as Vitamin D, was necessary. Further, it is clear that Dr. Steenbock did not, like the English investigators, Hume and Smith, and Goldblatt and Soames, and those who worked with them, limit their conception of the growth factor to Vitamin A. To him came the thought that when Vitamin A was sufficiently supplied, growth, with its con-

comitant, to-wit; increased calcification, could be used with his experimental rations as an index of the amount of Vitamin D present (R. 730-34).

The work of Dr. Steenbock appearing in the publication by him, Sell and Jones, Plaintiff's Exhibit 18 (R. 2058-65) in respect to the different amounts of growth induced by various kind of millets, not attributable entirely to differences in Vitamin A content, was aided by Dr. Steenbock's work with Dr. Nelson in March, 1923, to which we have already referred (Pl. Ex. 19; R. 2097) showing that ultra violet light and cod liver oil, in which oil the Vitamin A had been destroyed by aeration, induced growth in rats identical in degree and much greater than that obtained on the basal ration.

The work of the English investigators, Hume and Smith, was work of confusion and of error, and misleading as far as Dr. Steenbock's ultimate discoveries are concerned. Dr. Steenbock's work can best be viewed in the light of what was said in *Aerovox Corp.* v. *Concourse Elec. Co.*, 65 Fed. (2d) 386, 388:

> "History is a safer guide than speculation after the event."

Advent of Dr. Steenbock's Inventions.

Dr. Steenbock's inventions of the three patents in suit were conceived and reduced to practice prior to June 30th, 1924, the filing date of Dr. Steenbock's first application for patent.

On November 2nd, 1923 was begun the first experiment upon the activation of a food substance—a ration containing hog millet, casein and salts (R. 343-366; Pl. Ex. 35, R. 2243-44). The experiment, completed December 31st, 1923, demonstrated that the ration, when irradiated, pos-

sessed growth promoting and calcifying properties (R. 346, 481). This experiment is the foundation for the broad, generic claims 1, 5 and 8 of the First Steenbock Patent in which inhere the broad invention of his new cure for rickets. It is this experiment of which Dr. Steenbock said to Dr. Black (R. 740):

"* * * you may think this is a *fool experiment.*"

The Patents in Suit.

Based upon the above and other experiments conducted from November 2nd, 1923 to June, 1924, Dr. Steenbock filed his first application for patent (R. 2549). In the original application he disclosed fully the broad invention relating to the antirachitic activation of organic substances of dietary value and also he disclosed fully the activation of unsaponifiable lipoidal extracts (R. 2561-66). At the insistence of the Patent Office, however, Dr. Steenbock was required to present, by a continuation-in-part application, the subject matter of the invention relating to the activation of unsaponifiable lipoidal extracts (R. 2612). This application eventuated into the Second Steenbock Patent (R. 2285). Inadvertently yeast was not mentioned specifically as an activatable substance in the original application, but it was so mentioned in the continuation-in-part application. Again by reason of Patent Office exactions, yeast was made the subject matter of another continuation-in-part application which in turn issued as the Third Steenbock Patent in suit (R. 2291).

The relationship between the three patents, and the fact that the inventions of each were made prior to the filing of the original application for the first one, establish the correctness of the ruling of the Supreme Court of the District of Columbia in decreeing the issuance of the Second Steenbock Patent, of the Board of Appeals of the

Patent Office in causing the issuance of the Third Steenbock Patent and of the District Court in finding all three patents valid (R. 108, 2660, 2727).

The specifications of the patents in suit fully inform those skilled in the art exactly of what the inventions consist and how they are to be practiced. Those skilled in the art had no difficulty practicing the inventions of the three patents and certainly respondents have had no such difficulty (R. 2349-52).

The patents in suit do not claim anything broader than Dr. Steenbock's inventions. The invention of the First Patent is pioneer and generic in character and those of the Second and Third Patents are for separate inventions constituting species of the genus. The claims in all three patents are properly commensurate with the basic discovery or invention which Dr. Steenbock made and the various species thereof. The claims are definite and clearly define the scope of the three inventions, having regard to the breadth and nature of the primary invention.

Public Benefits.

The public benefits conferred by Dr. Steenbock's invention are many. Dr. Jeans, Professor of Pediatrics at the University of Iowa (R. 1297), Referee for the Council of Foods and Nutrition of A. M. A. (R. 1298), made clear the necessity for good utilization of calcium and phosphorus to promote good growth, and to prevent tooth decay, rickets and general muscular weakness (R. 1300-02, 1311-19). He made clear that infantile rickets is caused almost entirely by Vitamin D deficiency, and stated that Vitamin D may be synthesized when the skin is exposed to sunlight. He pointed out that sunshine is wholly inadequate (R. 1307); that smoke, clouds, dust and latitude are

responsible for reducing the effectiveness of sunshine (R. 1306). In the winter time, in temperate zones, the sunshine is wholly inadequate, even in the absence of smoke, clouds and dust. The amount of Vitamin D in the diet is little. Some small bit is found in cow's milk, egg yolk, and in other foods; but, when they are put together, it is rather unimportant in relation to the needs of the infant and child (R. 1307). He said that they are commonly disregarded by the physician to the point where he depends exclusively upon supplemental sources of Vitamin D (R. 1307)—such as cod liver oil and irradiated products, ergosterol, milk and yeast. In late years there has been a gradual reduction in the incidence of rickets. At the present day he has observed no active rickets in his practice (R. 1314). He found it necessary to go back to some of his early studies to find illustrative photographs of rachitic children—to some of which we have already called attention (Pl. Exs. 87-90, R. 2358-61). Sunshine has not been a factor in this reduction (R. 1316). He pointed out that until 1930 cod liver oil was the source of Vitamin D most extensively used. Because of the objection to the taste of cod liver oil, and for other reasons, the use of other materials has been increased, including irradiated ergosterol and irradiated fresh and irradiated evaporated milk, which products have played an important part in decreasing the amount of rickets and tetany; and that these products prevent rickets (R. 1317). Vitamin D milks have the advantage of automatic administration of Vitamin D. During pregnancy and lactation Vitamin D is necessary for the mother. Dr. Jeans also made it clear that Vitamin A, contrary to what many investigators prior to Dr. Steenbock's discovery believed, has no relationship to rickets (R. 1322).

The wide use of evaporated milk among children has been shown by the testimony of Nardin (R. 1341-42). It

was also shown that in 1940, 53% of all evaporated milk produced in the United States was irradiated with ultra violet rays to increase its content of Vitamin D (R. 1353). It also appears that 50% of artificially-fed infants are fed on evaporated milk. The number of deaths from rickets—which was .6 per 100,000 of population in 1921, decreased to .1 per 100,000 in 1939. The Steenbock inventions have greatly contributed to this.

The public benefits from Dr. Steenbock's inventions have not been confined to their material aid in the elimination of the malady, rickets. The public has likewise benefited because these patents are not used for private gain (Pl. Ex. 83, R. 2338). They have been soundly socialized. The royalties go to the petitioner, a corporation not for pecuniary profit, created to aid the University of Wisconsin in research in the fields of the natural sciences. They were given by Dr. Steenbock, the inventor, to this, the Wisconsin Alumni Research Foundation, which is conducted by a board of alumni, as set forth in the record (R. 1250-52).

Petitioner's Administration of the Patents in Suit.

In addition to this, petitioner, in the administration of the patents in suit, has for the protection of the public provided in its system of licenses a control over advertising claims made and over potencies of licensed products (R. 1466-68). Extensive laboratory analyses are made constantly upon licensed products to assure that the public is securing the benefits desired. Petitioner's control, far from constituting misue of the patents, protects the public from fraud, quackery and misrepresentation (R. 1275). The importance of this where the vitamin in question, Vitamin D, cannot be detected by the consumer through the senses of taste, smell, etc., cannot be gainsaid.

As to "dollars and cents" commercial success, which is of much lesser consequence than the actual human good accomplished, over 250 licensees in a variety of industries have accepted licenses under the patents in suit (Pl. Ex. 95, R. 1397). Petitioner has received from those licenses in excess of seven and a half million dollars in royalties, all of which, over and above expenses, is dedicated to the aid of scientific research at the University of Wisconsin (R. 1449).

Alleged Misuse of the Patents in Suit.

In its majority opinion the Court of Appeals discusses the question of whether it was against the public interest for petitioner to refuse the use of the inventions of the patents in suit for the irradiation of oleomargarine (R. 3312-13, 3317-22). Judge Healy at that time apparently did not approve of such discussion in the majority opinion, stating (R. 3341):

> "I think, though, that we should confine ourselves to the issues actually presented by counsel."

This question—i.e., whether petitioner should be denied relief because of its past refusal to license oleomargarine manufacturers under the patents in suit—was presented for the first time by the Court of Appeals in its opinion of November 24, 1944. The subject matter was not pleaded by respondents in their answer, except in its general pleading that petitioner cannot maintain the action and is entitled to no recovery because (R. 53)

> "plaintiff comes into court with unclean hands and is in an inequitable position."

The question was not argued either in the District Court or in the Court of Appeals, as the Court of Appeals recognizes in stating (R. 3318):

> "This raises the question, *not argued,* whether the effect on the public health of refusing to the users of oleomargarine, the butter of the poor, the right to have such food irradiated by the patented process is against the public interest."

There was no finding of fact or conclusion of law with reference to this alleged misuse of the patents in suit by the District Court, although other matters relating to alleged misuse were covered by the District Court's findings and conclusions, the District Court finding that there had been no such misuse (R. 107, 109).

The oleomargarine matter was not raised in respondents "Statement of Points" filed pursuant to paragraph 6 of Rule 19 of the Court of Appeals (R. 1823).

In view of the fact that the oleomargarine question was

> "one not properly raised, litigated or passed upon below"

(*McCullough* v. *Kammerer Corporation,* 89 Law Ed. 278), petitioner filed in the Court of Appeals a motion to remand the cause for the taking of further evidence with reference, among other matters, to the oleomargarine situation (R. 3415). An affidavit of one of the members of petitioner's Board of Trustees was filed in support of that motion (R. 3424). The Court of Appeals denied petitioner's motion to remand and wrote a further opinion (R. 3478). In this last opinion the Court of Appeals concluded that petitioner's refusal to permit the irradiation of oleomargarine (R. 3485)

> "warrants the refusal of the equitable injunctive and accounting relief sought by the corporation, though we hold the public interest is served better by our decision that the patents are invalid."

In petitioner's motion to remand filed in the Court of Appeals and in the affidavit filed in support thereof, petitioner set forth some of the reasons which prompted it not to offer licenses under the patents in suit to oleomargarine manufacturers (R. 3417, 3424-27). The moving papers also showed that long prior to the question being raised for the first time by the Court of Appeals in its opinion of November 24, 1944, petitioner had permitted and now permits the use of the inventions of the patents in suit for increasing the Vitamin D content of oleomargarine, although manufacturers of that product have had and now have little or no interest in licenses under the patents or in the use of Vitamin D in oleomargarine (R. 3424). However, by the denial of petitioner's motion to remand by the Court of Appeals, petitioner was not permitted to fully develop evidence relating to oleomargarine. Consequently the matter is presented to this Court on an incomplete record.

Regardless of whether or not petitioner was justified in not offering licenses to oleomargarine manufacturers—i.e., regardless of the reasonableness or unreasonableness of such policy,—the Court of Appeals, in its decision denying petitioner's motion to remand, has decided an important question of law in direct conflict with the decision of this Court in the *Paper Bag Patent Case* (*Continental Paper Bag Company* v. *Eastern Paper Bag Company,* 210 U. S. 405). In that case this Court laid down the principle that a patent is a property right and that a patent owner may, without losing his right to relief in equity, exclude others from *any* use or benefit from the invention whatsoever during the life of the patent. This Court there pointed out that in the patent statute (p. 423):

> "the language of complete monopoly has been employed,"

and quoted briefly from this Court's language in *United States* v. *Bell Telephone Company*, 167 U. S. 224, 250 as follows:

> "Counsel seem to argue that one who has made an invention and thereupon applies for a patent therefor, occupies, as it were, the position of a quasi-trustee for the public; that he is under a sort of moral obligation to see that the public acquires the right to the free use of that invention as soon as is conveniently possible. We dissent entirely from the thought thus urged. The inventor is one who has discovered something of value. *It is his absolute property.* He may withhold the knowledge of it from the public, and he may insist upon all the advantages and benefits which the statute promises to him who discloses to the public his invention."

In further discussing the rights of a patent owner, this Court further said in the *Paper Bag Patent Case* (p. 429):

> "As to the suggestion that competitors were excluded from the use of the new patent, we answer that *such exclusion may be said to have been of the very essence of the right conferred by the patent,* as it is the privilege of any owner of property to use or not use it, *without question of motive. Connolly* v. *Union Sewer Pipe Co.*, 184 U. S. 546."

In an earlier case, *Bement* v. *National Harrow Co.*, 186 U. S. 70, 90, this Court quoted with approval a Sixth Circuit Court of Appeals decision, *Heaton-Peninsular Button-Fastener Company* v. *Eureka Specialty Company*, 47 U. S. App. 146, 160, in which that court had said:

> "If he see fit, he may reserve to himself the exclusive use of his invention or discovery. If he will neither use his device nor permit others to use it, *he has but suppressed his own.* * * * A suppression can endure but for the life of the patent, and the disclosure he has made will enable all to enjoy the fruit

> of his genius. His title is exclusive, and so clearly within the constitutional provisions in respect of private property that *he is neither bound to use his discovery himself nor permit others to use it.*"

The most recent pronouncement of this Court on the subject of alleged suppression of patents is *Special Equipment Company* v. *Coe*, decided March 26, 1945. In that case this Court said:

> "This Court has consistently held that failure of the patentee to make use of a patented invention does not affect the validity of a patent. *Continental Paper Bag Co.* v. *Eastern Paper Bag Co.*, 210 U. S. 405; *Crown Co.* v. *Nye Tool Works*, 261 U. S. 24, 34; *Woodbridge* v. *U. S.*, 263 U. S. 50, 55; *Fox Film Corp.* v. *Doyal*, 286 U. S. 123, 127; *Hartford-Empire Co.* v. *U. S.*, 323 U. S. 386, 433."

It should be pointed out that the oleomargarine question, raised for the first time by the Court of Appeals in the majority opinion of November 24, 1944, is not a question of *complete* suppression of the use of the patent, or a question of *non-use*. The Steenbock inventions have been widely used in the food and drug industries contributing to the resultant almost complete eradication of the disease, rickets, as the record most completely shows.

The question posed by the Court of Appeals relates to petitioner's refusal to license in a very narrow and restricted field, to-wit: oleomargarine, in which field, had the Court of Appeals remanded for the taking of further evidence, the record would have demonstrated there was little or no demand for the use of the inventions of the patents in suit.

The decision of the Court of Appeals on the oleomargarine question is likewise in direct conflict with another recent pronouncement of this Court in *Hartford-Empire*

Company v. *United States*, 323 U. S. 386, decided January 8, 1945, and cited in the above quoted portion of this Court's opinion in *Special Equipment Company* v. *Coe*. In the *Hartford-Empire* case, this Court said:

> "A patent owner is not in the position of a quasi-trustee for the public or under any obligation to see that the public acquires the free right to use the invention. *He has no obligation* either to use it or *to grant its use to others.* If he discloses the invention in his application so that it will come into the public domain at the end of the 17 year period of exclusive right he has fulfilled the only obligation imposed by the statute. This has been settled doctrine since at least 1896. Congress has repeatedly been asked, and has refused, to change the statutory policy by imposing a forfeiture or by a provision for compulsory licensing if the patent is not used within a specified time."

In the majority opinion of the Court of Appeals in the case at bar, that Court recognized the earlier holdings of this Court above set forth when it said (R. 3320):

> "Suppression of the use of the property in a patent has often been held the right of the holder of the patent monopoly, * * *."

In deciding that petitioner's refusal to license oleomargarine manufacturers (R. 3485):

> "warrants the refusal of the equitable injunctive and accounting relief sought by the corporation,"

the Court of Appeals has decided an important question of law contrary to the previous and later decisions of this Court above referred to. We submit that that question should be decided by this Court, and this petition for the writ of certiorari should, therefore, be granted.

Scope of Claims in Suit—Whether Broad Enough to Include Sunlight or Limited to Artificial Light.

The majority opinion of the Court of Appeals interprets claims 1, 2, 3 and 8 of the First Patent as being broad enough to include solar irradiation and finds these claims invalid for anticipation "by immemorial agricultural and horticultural processess" (R. 3322). Judge Healy disagrees, stating (R. 3341-2):

> "Further, it appears to me doubtful that the claims are fairly subject to the criticism that they broadly include a monopoly of the use of sunlight."

In this we think he is supported by the definite disclaimer of sunlight in the specification of the First Patent, and by what transpired in the prosecution of the application for that patent as we shall presently point out.

With respect to the interpretation of claims in the majority opinion as comprehending sunlight irradiation, it would appear to have been overlooked that the Patent Office allowed the claims of the First Patent as claims limited to *artificially* produced ultra violet rays. Thus in his action upon the amendment which introduced these claims, the Examiner rejected claims 6 to 9 upon authority of *Cochrane* v. *Badische Aniline,* 111 U. S. 293, stating (R. 2586):

> "Antirachitic food substances being old as occurring in nature, applicant has not defined a patentably new composition of matter by defining food substances *artificially made antirachitic by a specific process.*"

Each of these product claims was made dependent upon process claim 1, from which it becomes clear that this claim (now claim 1 of the First Patent) was treated by the Patent Office as being for a process of *artificially* imparting antirachitic properties to organic substances of dietary value, and not as the majority opinion treats that claim.

We submit that the claims in suit of the First Patent should stand *as the Patent Office interpreted them,* rather than that they should be taken in broader scope simply because petitioner *had* at one time asserted the First Patent against solar irradiation, especially since the practice then charged to infringe involved the *concentration* of the sun's rays by *artificial means* (R. 3420, 3427, 3433).

Neither should the inventor's testimony which is quoted in the majority opinion be given effect to put a different interpretation upon his claims from that put upon them by the Patent Office when allowing them to him.

With respect to the disclaimer of sunlight in the specification of the First Patent, the *first* appearance of anything of this character was not in the amendment which introduced the claim quoted in the opinion and which specifically read "artificially produced rays". The specification as originally filed contained the following statement (R. 2560):

> "Sunlight, of course, contains the rays of the ultra violet region, as well as other rays. However, *under ordinary conditions, the sunlight is not given an opportunity to affect various food products in such manner as to activate them antirachitically.* Probably the chief difficulty is that the sunlight is *not sufficiently rich in the rays of the ultra violet* character, or these rays are *not sufficiently concentrated,* to perform the required activation which is necessary to supply an antirachitic food. *Under special conditions, sunlight may be employed to improve the condition of foods, but ordinarily the use of an artificial light, rich in the rays of the ultra violet region of the spectrum, will be necessary* for practical purposes.
>
> "The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art."

The claims that were *originally* filed were *not limited to artificially produced rays.* We think it is significant that the *much more definite disclaimer* which was substituted by the amendment introducing the claim quoted in the majority opinion (R. 3327), was *retained when the later amendment was made substituting claims of the patent* for those which had been introduced by the preceding amendment and had been rejected, or objected to, on various grounds (R. 2578-9).

We direct attention to other testimony of Dr. Steenbock than that quoted in the majority opinion where he gives reasons why sunlight "is not available practically for the production of the antirachitic principle", and why "Artificial light rich in the rays of the ultraviolet region of the spectrum is *necessary.*" On pretrial adverse examination he was questioned concerning sunlight experiments and testified (R. 537):

> "The reason that we did not attach much importance to these irradiation experiments was that sunlight was so variable and so difficult to use, so we didn't consider it practical."

He later testified that, as shown by the wide prevalence of rickets in children and animals (R. 617):

> "* * * the sun was not efficient, was not doing the job, and there was need for the use of *artificial sources* of ultra violet for the purpose."

Dr. Nelson similarly testified at trial. Thus on cross examination he was asked (R. 269):

> "What is meant by the statement that sunlight is not available practically for producing the antirachitic principle?"

and answered,

"If you wanted to produce vitamin D under commercial conditions, let us say, *you couldn't depend on the sun to uniformly provide you with ultra violet rays of sufficient intensity* that you could carry on such a process continuously."

He likewise testified (R. 271):

"Q. Isn't the statement that sunlight is not available practically for the production of the antirachitic principle an incorrect statement?

"A. No; *I would not say it was incorrect.*

"Q. Isn't the sunlight available for producing the antirachitic factor in many things?

"A. My best answer to that is that *I don't know of any commercial product now on the market that contains vitamin D and that is offered for sale as such, because of its vitamin D content, that has been activated by the sun. Under those circumstances, I just don't believe it is a practical proposition.*"

Later on in the cross-examination he testified (R. 272):

"It is only under very unusual and very limited circumstances that you could say that sunlight is available for the practical production of the antirachtic principle."

His attention was then called to the sentence of the specification reading,

"Artificial light rich in the rays of the ultra violet region of the spectrum is *necessary.*"

and he testified (R. 272):

"Q. Will you refer now to page 4, lines 77 and 78? Do you understand from this statement that, according to the teachings of this patent, artificial light is necessary to produce vitamin D?

"A. For the practical production of vitamin D, I would say. That is the way I read those sentences. I read the two together.

"Q. You have to qualify that by using the word 'practical'?

"A. Yes; I think you have to read that sentence and its context and that follows immediately the sentence before which states that sunlight, of course, contains ultra violet rays but is not available practically for the production of the antirachitic principle. Then it says, 'Artificial light rich in the rays of the ultra violet region of the spectrum is necessary.' *I think for the practical application of the process it is necessary to use an artificial source of ultra violet rays.*"

In the majority opinion, the Court of Appeals stated (R. 3323):

"The sun is an 'other source of light [which] may be employed in effecting the activation' of vitamin D. The ultra violet rays of the sun are 'such as' produced by the lamp."

Compare this with Dr. Nelson's testimony regarding the meaning of the expression in the patent "or other source of light." He testified (R. 289-290):

"Q. Do you think that it refers to the sun as a source of light?

"A. *No;* not when you read that as a part of that whole sentence.

"Q. When you read that as a part of Dr. Steenbock's statement that artificial light is necessary, under those circumstances would you say that that refers to the sun?

"A. I would expect this to refer to sources of light that provided ultra violet rays of *considerable intensity.*

"Q. Why would you reach that conclusion, Doctor?

"A. Because of the other sources of light mentioned.

"Q. Would you take it that he referred to other sources of light like those he had mentioned above, that is, like the quartz mercury vapor lamp and the carbon arc?

"A. *I don't believe it refers specifically to sunlight* because it is well known that you get ultra violet rays from the sun and, *if those rays were effective for the purpose, I think it would have been mentioned in here. Therefore, I think it probably refers to these sources of light that are a little more intense.*

"Q. In other words, you think that the patent would mention those sources which were effective for producing the antirachitic factor?

"A. As I say, if sunlight, concerning which it is common knowledge that it is a source of ultra violet rays, were particularly effective, I think it would have been mentioned."

The foregoing supports what is found in the first paragraph of Judge Healy's "concurring" opinion where it reads (R. 3341-2):

"* * * it appears to me doubtful that the claims are fairly subject to the criticism that they broadly include a monopoly of the use of sunlight."

We submit that the Patent Office record itself puts the claims beyond any such criticism so that the disclaimer in the specification of the patent should be given full effect. The characterization of the statement "not available practically", as "ambiguous" in the majority opinion does not dispose of the immediately following statement in the specification:

"Artificial light rich in the rays of the ultra violet region of the spectrum is *necessary.*"

Here there is no such qualification respecting "special conditions" of sunlight irradiation as stated in the application *as filed* (R. 2560).

If, as we respectfully urge, the claims of the First Patent do not cover sunlight, then there is no anticipation of these claims by "immemorial agricultural and horticultural processes", as found in the majority opinion (R. 3322), nor is there anticipation of these claims by "the farmer in hay curing in the sun and the coconut grower sun drying the cut meat of the coconut" (majority opinion, R. 3330).

Judge Healy's opinion is only "concurring" in part, for, and as we have already pointed out, he disagrees with the majority opinion as to claims 1, 2, 3 and 8 of the First Patent being inclusive of "a monopoly of the use of sunlight" (R. 3342). Somewhat inconsistently, it seems to us, he concludes his opinion as follows (R. 3346):

> "If the discovery were patentable it would be broader than the process itself in that it 'would cover all processes which aim at the same result', including even the purposeful exposure of dietary substances to the direct rays of the sun."

However, this may, we suppose, be taken as a sort of corollary to the statement at an earlier point in his opinion (R. 3345): "The intervention of the mercury vapour lamp —developed long prior to Steenbock—may adapt the natural process to wider fields, but in a patentable sense the process itself is as ancient as the sun."

But this again seems inconsistent with what precedes in the opinion with respect to ultra violet rays, reading (R. 3345):

> "Men may devise or improve machines for their more effective utilization and may obtain patents upon the machine or the improvement."

This sound statement is equally applicable to *processes* and *their* improvement, and certainly Dr. Steenbock's process improved upon sunlight irradiation not alone in adapting it "to wider fields", as the opinion recognizes, but in attaining practicality and control whereby "purposeful exposure of dietary substance" to ultra violet rays has resulted in untold benefit to mankind and to animal husbandry, infinitely transcending anything capable of accomplishment in solar irradiation.

As admirably put by Judge Goodman in *Vegetable Oil Products Co.* v. *Dorward & Sons Co.*, 60 U. S. P. Q. 4, 7, D. C. N. D. California:

> "Some contention is made by defendants that this process is nothing more or less than a law of natural science and therefore is not patentable. True, the process makes use of and applies laws of natural science. Processes applying the laws of nature or of the natural sciences have always been considered subject to patent. *Sewall* v. *Jones*, 91 U. S. 171. Behr did not discover a 'scientific certitude'; rather as a result of a 'scientific certitude', he formulated a novel process."
>
> * * * * * *
>
> "True, much experimentation and investigation in the general subject matter had been going on for many years. Some of the steps described in the Behr patent had been theretofore discovered. Many experiments had been made and considerable literature written upon the subject. However, up to the time of Behr, no one had aggregated the necessary steps into a process possessing a new utilitarian function."

Judge Healy was certainly justified, upon the record in the instant case, in saying as he did in his "concurring" opinion (R. 3342):

> "I do not doubt that Professor Steenbock is to be accounted a pioneer in his special field, namely, the *artificial* activation of vitamin D in foods."

We submit that his patents merit judicial consideration in *that* spirit, rather than with a view to reading into an alleged anticipation subject matter not appearing therein and presenting nothing that did or could achieve the purpose of Dr. Steenbock's endeavors which so signally scored in the eradication of the age-old scourge of rickets.

"The Area of the Claimed Monopoly" is Not Indefinite.

The majority opinion of the Court of Appeals (Judges Denman and Stephens) held claims of the first two patents to be "invalid because of indefiniteness of the area of the claimed monopoly" (R. 3331).

Judge Healy dissented, stating (R. 3345),

> "It seems to me doubtful that the claims should be held invalid because lacking in particularity in respect of the period of time of exposure. It may be that they are sufficiently specific to enable those skilled in the art to understand what is intended. I assume, therefore, that Steenbock discovered and **sufficiently disclosed in his claims the most effective time period of exposure**".

He is supported in this by the fact that great numbers of industrial concerns operating in widely diversified fields sought and obtained licenses under these patents without any indication of uncertainty as to the "area of the claimed monopoly". Among them are such well-known concerns as E. I. duPont de Nemours & Co., The Quaker Oats Company, General Foods Corp., Parke Davis & Co., Standard Brands, Inc., Carnation Co., and E. R. Squibb & Sons.

The majority opinion, cites as authority for the holding of invalidity on grounds of indefiniteness, decisions of this

Court in *General Electric Co.* v. *Wabash Co.*, 304 U. S. 364, and *United Carbon Co.* v. *Binney Co.*, 317 U. S. 228. Neither of these cases is closely applicable because the invention claimed by Dr. Steenbock is very different in character from the inventions claimed in the patents that were before this Court in the cited cases.

In each of them the claims that were held to be invalid for indefiniteness were claims that purported to define a product *by its structural characteristics or physical form.* In the instant case the claims condemned in the majority opinion of the Court of Appeals for indefiniteness are claims for processes and resultant products that are *not structurally definable,* and so are defined by reference to the process of their production.

In the *Wabash* case the product claimed was a tungsten filament and the novelty lay in the structural character or physical form of the chain of grains or crystals making up the filament, whereby it was rendered non-sagging. The vice of the claims was their failure to define the structural characteristics which produced the non-sagging result,—the language being "of *such* size and contour as to prevent substantial sagging and offsetting during a normal or commercially useful life of such a lamp or other device". This the Court regarded as use of "conveniently functional language at the exact point of novelty".

No parallel to this is presented in the instant case. The claims in suit define a process of imparting the anti-rachitic property to organic substances of dietary value by subjecting them to the action of artificial light rays, specifically ultra violet rays, for a length of time which will insure the retention of the anti-rachitic property in substantial degree so that the resultant product can be used effectively in the prevention or cure of rickets. That product, not being definable by structural characteristics or physical

form, is defined in the product claims by specific reference to the process, i.e., the process as defined in precedent claims. This type of product claim is approved of in the *Wabash* case. Thus this Court there said (P. 373):

> "a claim may validly describe a new product with some reference to the method of production",

and the opinion concluded as follows (P. 374):

> "Finally, the product claims may not be saved by a limitation to products produced in accordance with the process set out in the specification. This construction, though possibly of no avail against respondent, might add to the protection afforded petitioner by the process claims, if they are valid, in view of its application to filaments produced abroad. But putting aside questions as to the general propriety of such a construction, *unless the claim uses language explicitly referring to the method of preparation,* or describing the product in phrases suggestive of that process, to save the product claim in this fashion would constitute an improper importation into the claim of a factor nowhere described there. The claims in suit seek to monopolize the product however created, and may not be reworded, in an effort to establish their validity, to cover only the products of the process described in the specification, or its equivalent."

The claims here in suit do not seek to monopolize the product however created but are expressly limited to a product produced by the process disclosed and made the subject of other claims to which express reference is made in the product claims.

The *United Carbon* case presented a situation akin to that presented in the *Wabash* case, the only claims in suit having been claims to a product without any reference to the process of production but solely to physical form or structural characteristics. The claims were held to be in-

valid because of not being sufficiently specific in defining the structural characteristics of the product, to wit, carbon black. The Court ruled that "the claims were but **inaccurate** suggestions of the functions of the product, and fall afoul of the rule that a patentee may not broaden his claims by describing the product in terms of **function**".

Again, as in the *Wabash* case, no parallel is presented between the subject matter with which the Court dealt in the *United Carbon* case, and the subject matter of the patents in suit in the instant case.

In concluding the opinion in the *United Carbon* case the Court made this pronouncement (P. 237):

> "An invention must be capable of accurate definition and it must be accurately defined, to be patentable."

We submit that a reading of the specifications of the Steenbock patents can leave no doubt as to his inventions being "capable of accurate definition" and having been "accurately defined". The evidence abundantly shows that those specifications contain everything needed to acquaint those skilled in the art with the particulars of the inventions and to adequately instruct them as to how the inventions are to be practiced.

The *record* shows that the Steenbock specifications were amply instructive to those skilled in the art. No *evidence* to the contrary was offered on defense. No one could be uncertain about infringement. The Steenbock discovery was heralded by the scientific world as epochal and there ensued clamour for licenses which would scarcely indicate "uncertainties of the monopoly area claimed" on the part of interested industries.

Certainly it is true that the record shows no instance of anyone having had real difficulty in avoiding "substantial injury to the antirachitic factor" and thereby being uncer-

tain in regard to infringement. In respect to the operations of petitioner's licensees, Dr. Steenbock testified (R. 701):

> *"But none of them had any trouble in carrying out the operations satisfactorily. We did not have to carry out any of these experiments for them."*

Similarly, respondents have apparently had no trouble at all in avoiding "substantial injury to the antirachitic factor."

Admittedly in order to avoid "substantial injury to the antirachitic factor," certain factors must be controlled, such as time of treatment, distance of light from the material being treated, intensity of the rays, state of comminution of the material, agitation of the material when in solution, etc. But, as Dr. Steenbock testified, the determination of these factors is a simple matter to those skilled in the art. He said (R. 699):

> "Q. And the determination of those particular factors are left to the person performing the process?
>
> "A. Yes, they are *quite obvious to those who are versed in chemical art.*
>
> "Q. Now, from the standpoint of time and distance, would it be obvious to the skilled technician to select suitable times and suitable distances for treatment?
>
> "A. He would have to carry out certain preliminary trials, but after getting certain results why *he wouldn't have any difficulty.*"

It thus appears that the terms "sufficient," "substantially maximum activation" and "substantial injury to the antirachitic factor" were informative enough to those skilled in the art not only to tell them how to use the process but also to advise them of the "monopoly area claimed."

The problem which Dr. Steenbock's patent solicitor had before him was not how to accurately *define* the inventions but how to *claim* them so that protection would be had commensurate with their generic nature.

The evidence shows that prior to applying for his First Patent Dr. Steenbock had ascertained by test that the time of exposure could be widely varied in achieving the result of endowing substances with the antirachitic property in substantial degree. The patents teach *that,* and those skilled in the art needed no more than the one specific example of practice of the new process which is given, and the instruction also contained in the specification as to how the time of exposure could be varied, as well as other variables of the process.

The majority opinion reflects difficulties imagined by the author concerning the "area of the claimed monopoly", none of which difficulties were encountered by any of the numerous industrial concerns that took licenses under the patents.

We submit that the "area of the claimed monopoly" is perfectly defined in the respect referred to, viz., the time of exposure, by the wording "for a period sufficient to effect anti-rachitic activation but so limited as to avoid subsequent substantial injury of the antirachitic principle". This quite definitely directs that the exposure be not continued to a point where, due to the destructive effects that accompany the imparting of the desired property, no substantial amount of it would be left.

The majority opinion seizes upon certain testimony of Dr. Steenbock as basis for academic discourse regarding economics as though demonstrating fatal "uncertainties of the monopoly area claim" (R. 3333-5). We say "academic" because this has no basis in realities revealed by the record.

Thus the record contains nothing indicative of any uncertainty on the part of any one of the multitude of business concerns which negotiated licenses to operate under the Steenbock patents. The notion voiced in the majority opinion that infringement is to be determined as between economic gain and economic loss cannot be justified.

In connection with this curious manner of dealing with the question of infringement it will be helpful to consider the phrasing of claim 1 of the First Patent as it read prior to its final amendment. The concluding clause read "for a period sufficient to effect antirachitic activation but so limited as to avoid subsequent *destruction* of the antirachitic principle or injury to palatability" (R. 2581). It is quite possible that "uncertainties of the monopoly area cleamed" might have arisen had the claim issued as so worded.

Expression of the time element was occasioned by citation of references disclosing *sterilizing* processes wherein substances of dietary value were subjected to the action of ultra violet rays emanating from a quartz mercury vapour lamp. Transitorily the antirachitic property would be imparted to the substance *but its destruction would result from continuing the exposure to accomplish sterilization,* or at least there would be diminution of the imparted antirachitic principle to an unsubstantial or inconsequential point. Therefore uncertainty might well have existed as to coverage of the claim, e.g., whether it was limited to endowing the substance with a *substantial* measure of antirachitic property or was so comprehensive as to possibly include a sterilization process.

Evidently appreciating this possibility the solicitor voluntarily amended the claim (R. 2590) to read as in the patent "for a period sufficient to effect antirachitic activation but so limited as to avoid subsequent *substantial injury* of the antirachitic principle",—in other words, so as to retain a

substantial measure of that principle,—one which would make the substance useful to achieve Dr. Steenbock's purpose of providing foods that would effectively work to prevent or to cure rickets. Thus the area of the monopoly claimed was defined with no such uncertainties as theorized in the majority opinion—indeed, an area well understood by all who desired to practice Dr. Steenbock's invention including the defendant in the case at bar.

This Court has delivered opinions in a number of cases which *are* applicable to the status of the claims in suit (as the decisions in *General Electric* v. *Wabash* and *United Carbon* v. *Binney* are *not*), because of dealing with patents on processing of materials where much variation would be practiced. A leading case is *Minerals Separation* v. *Hyde,* 242 U. S. 261. We quote a pertinent passage from the opinion (pp. 270-271):

> "Equally untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are treated preliminary tests must be made to determine the amount of oil and the extent of agitation necessary in order to obtain the best results. Such variation of treatment must be within the scope of the claims, and the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter. The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case. The process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence abundantly shows. This satisfies the law. *Mowry* v. *Whitney,* 14 Wall. 620; *Ives* v. *Hamilton,* 92 U. S. 426, and *Carnegie Steel Co.* v. *Cambria Iron Co.,* 185 U. S. 403, 436, 437."

In the there cited case of *Carnegie Steel Co.* v. *Cambria Iron Co.*, it was said (p. 437):

> "The specification of the patent is not addressed to lawyers, or even to the public generally, but to the manufacturers of steel, and any description which is sufficient to apprise them in the language of the art of the definite feature of the invention, and to serve as a warning to others of what the patent claims as a monopoly, is sufficiently definite to sustain the patent."

And further, same page:

> "We think this second claim not only describes with sufficient clearness the purpose of the patent to secure uniformity of the molten metal in its constituent parts preparatory to further treatment, but read with the specification *sufficiently* describes the process by which this uniformity may be secured, by always preserving in the reservoir a sufficient quantity of molten metal to secure such uniformity of product."

In *Smith* v. *Snow*, 294 U. S. 1, a process claim was sustained which read as follows:

> "1. The method of hatching a plurality of eggs by arranging them at different levels in a closed chamber having restricted openings of *sufficient* capacity for the escape of foul air without *undue* loss of moisture and applying a current of heated air, said current being created by means other than variations of temperature and of *sufficient* velocity to circulate, diffuse and maintain the air throughout the chamber at *substantially* the same temperature, whereby the air will be vitalized, the moisture conserved and the units of heat will be carried from the eggs in the more advanced stage of incubation to those in a less advanced stage for the purpose specified."

In the companion case, *Waxham* v. *Snow*, which follows in the same volume, page 7, a defense of functionality was overruled. And it is of interest to note that in *Buckeye*

Incubator Co. v. *Wolf*, the late Judge Westenhaver overruled a defense of indefiniteness.

We are reminded here of how the majority opinion in the instant case undertook to dispose of petitioner's contention that the *Wabash* and *United Carbon* cases were distinguishable because the patents with which they dealt "were for products rather than processes", the opinion stating (R. 3338):

> "There seems no distinction in principle between inadequate limitation of the monopoly area in such product and process claims."

But in an earlier opinion of the same Court in *Fullerton Walnut Growers Assoc.* v. *Anderson-Barngrover Mfg Co.*, 166 Fed. 443, the late Judge Gilbert, speaking for the Court, had said (p. 449):

> "A patent for a process is not to be held to the strictness of specification required in a patent for a composition, and the decisions holding void applications for patents of the latter class are not necessarily applicable to process patents."

This was preceded by the statement:

> "The inventor was not required to specify how the process could be most economically used. It was enough if he so described it that one skilled in the art could use it. It may be conceded that clearer information would have been afforded if the precise proportions of each solution had been indicated, but we are not prepared to say that for want of such precise information the patent should be held void."

The conclusion was expressed as follows:

> "We think that one skilled in the art of bleaching could, from the terms of the specification, without further information, make a compound solution such as would render the process practicable."

All of this has very definite application to the situation presented in the instant case.

The foregoing applies alike to the claims of the First and Second patents, the same definitive language being employed in each as to time of exposure. Since "indefiniteness" is the only ground upon which the Second Patent has been held to be invalid, we submit that certiorari should be granted for review respecting that patent in any event.

The Second Patent.

This patent is devoted to Dr. Steenbock's ancillary concept of a process involving separation from a parent substance of its activatable ingredient whereby to obtain a concentrated extract. The activatable ingredient consists of unsaponifiable lipoids and so the extract is defined in claims of this Second Patent as "an unsaponifiable lipoidal extract".

This has proved to be of very great benefit in dissemination of Dr. Steenbock's revolutionary remedy for prevention and cure of rickets. It is extensively used medicinally and also in antirachitically fortifying foods for both animal and human consumption.

Medicinally the concentrated extract is ideal both for packaging in convenient size and for dosage use. And in many fields the fortifying of food products by incorporation of the concentrated extract is far more practical and economical than irradiation of the food substances themselves. For example, stock and poultry ranchers practice fortifying feeds with activated ergosterol or 7-dehydrocholesterol, and flour mills and commercial bakers do the like. Thus they do not have to equip for irradiating their products, nor do purveyors of feeds, but simply buy the already activated extract which petitioner's licensees supply at

moderate cost. This is also the case as to various other products such as breakfast cereals, dry milk, fluid milk, evaporated milk, infant foods (such as Ovaltine, Cocomalt, etc.) and others. Products of the Second Patent—i.e. concentrates—also permit of raising the Vitamin D potency level of many such foods far beyond potencies that could be produced therein by direct treatment thereof with ultra violet rays—an important contribution of the Second Patent.

Claim 1 of this patent is phrased to comprehend practice of the process with irradiation of the lipoids either before or after their separation from the parent substance (R. 2287). But the commercial practice has been to first separate the lipoids and then irradiate them, to which practice claims 2 and 3 relate. By this practice antirachitic potency is obtainable greatly in excess of that resulting from irradiating the parent substance and then separating the lipoids, conditions of irradiation being the same (R. 688, 2287).

There is the further advantage that, as stated in the Second Patent (p. 2, l. 103), the irradiation can be "more prolonged" which means that the range of timing is increased while still retaining a substantial antirachitic property. See also Dr. Steenbock's testimony (R. 682).

The first Steenbock application contained a full disclosure of the separation process and claimed it and the product (R. 2561-2, 2564), but the Patent Office required confinement to claiming the generic invention and but one of the several disclosed species thereof. In the set of claims substituted for those originally filed there were still some to the separation process and product (R. 2573-5). The Patent Office again objected, dividing the claims into seven groups by species, and repeating the requirement that the claims be confined to genus and one species (R. 2579). This

was then done and within a few days the second application was filed as "in the nature of a division and continuation" of the first application (R. 2622).

Having driven the applicant to the expedient of filing this separate application, and others pertaining to different species, the Patent Office Examiner then refused to recognize patentability in any of them over what was claimed in the parent application (R. 2626). On appeal to the Board of Appeal the rejections were affirmed (R. 2655). The applicant then pursued his statutory remedy of a suit against the Commissioner of Patents in the Supreme Court of the District of Columbia. He prevailed as to the application for the Second Patent (R. 2660).

All of this consumed time which accounts for the term of the Second Patent running some four years beyond the term of the First Patent.

In the majority opinion first delivered by the Court of Appeals the Second Patent was held to be invalid on the same grounds as the First Patent,—anticipation by natural sun process and by prior publication,—that opinion reading (Appendix 7) "the same reasoning makes invalid the Second Patent." Upon petition for rehearing, that opinion was withdrawn, and the superseding opinion does not hold invalidity of the Second Patent on those grounds or either of them, but *solely on the ground of indefiniteness of claims,*— a defense not passed upon at all in the first opinion.

We have heretofore pointed out that Judge Healy of the Court of Appeals disagreed with the majority of the court in regard to the matter of alleged indefiniteness (R. 3345). He assumed (R. 3345):

> "* * * that Steenbock discovered and sufficiently disclosed in his claims the most effective time period of exposure."

Nevertheless, Judge Healy is wholly silent in his "concurring" opinion with respect to the validity of the Second Patent. Since he does not believe it to be invalid on the ground of indefiniteness, we think it may fairly be assumed that he regards the Second Patent as a valid one.

It is perfectly clear that the Second Patent was not anticipated, either by any natural sun process or by any prior publication. The sun never did any such thing as separating unsaponifiable lipoids from a parent substance, and no prior publication teaches any such thing or even hints at it.

There is no more indefiniteness about the Second Patent than there is about the First Patent. Claims of the Second Patent read the same as do claims of the First Patent as to time of exposure so that what we have hereinbefore presented on the subject of indefiniteness applies to them as well as to the claims of the First Patent.

Goldblatt and Soames Publication.

In respect to the prior published art, there is no anticipation of the claims in suit of the First Patent by the Goldblatt and Soames publication (R. 3162) which is given but scant attention in the majority opinion (R. 3329-30), and which is not even mentioned in the conclusion on the question of anticipation (R. 3330). Goldblatt and Soames irradiated *in vitro,* not *in vivo.* From the standpoint of anticipation, a live rat is clearly not an "organic substance of dietary value" within the meaning of claims 1 and 8 of the First Patent, or a "food substance" within the meaning of claim 5 of that patent.

Irradiation *in vitro* had been erroneously treated in the original (withdrawn) opinion as activating "the antirachitic substance in fatty flesh under the skin" there characterized as being "in a sense, stored food" (Appendix

3). The majority opinion asserted knowledge of such a thing as coming from Dr. Steenbock, whereas he had testified directly to the contrary (R. 610, 611). He there told of a test upon a live rat which proved "that the ultra violet radiations did not penetrate to the inner organs, not even the skin, not even through the skin, not to say anything about the muscle and the peritoneum, and so on."

Goldblatt and Soames certainly did not teach Steenbock's "truly remarkable conception". Judge Healy's "concurring" opinion, from which this quotation is taken, refers to these scientists as having practiced "the actual process of irradiating edible substances with the mercury vapour lamp". What Goldblatt and Soames actually did is not proven. We have only their published article so the one question is what *that* taught. Presumably the edible substance referred to is the liver but the evidence of record shows that *that* substance would not and could not be *irradiated* by their process. The process by which the liver in the living animal becomes antirachitic is unknown to this day.

At an earlier point the "concurring" opinion refers to the prior art of "irradiating living tissues" with mention of Huldschinsky's published work concerned with humans (R. 3342). Taking this to mean irradiation of skin tissues, and conceding that such a thing occurs, there is nothing of record to show that these tissues retained any antirachitic property so that they could constitute activated edible substances and so be used to reach Dr. Steenbock's objective. The evidence is to the contrary (R. 296-8).

Goldblatt and Soames taught little beyond what had been known for centuries in respect of the codfish. They did not advance the art one whit by way of teaching a preventative or cure of rickets in consumption of food as daily

habits of humans or animals, which was Dr. Steenbock's objective. Nobody ever heard of rat-liver oil and it is scarcely to be supposed that it would have been more acceptable than cod liver oil.

In view of what was already known about cod liver oil there could scarcely have been anything surprising in Goldblatt and Soames' results. The significant thing is that nobody of all the numerous scientists who were studying the subject of antirachitics thought of taking out livers and directly activating them, except Dr. Steenbock (R. 1720).

The real question is not anticipation of Steenbock by Goldblatt and Soames, but whether Steenbock made an *inventive* advance over their publication, which question is not essentially different from that of whether he made an inventive advance over nature's work with the codfish. The fact that centuries passed without any such advance being made by any of the numerous scientists who were in the field, speaks eloquently for inventive quality in Steenbock's conception.

Hume and Smith Publication.

As to anticipation by the Hume & Smith publication (R. 3149; referred to only in the concurring opinion and *not* found anticipating in the majority opinion), again there is no proof of actual accomplishment and so it is solely a question of what the publication taught. It taught error. The theory expounded was exploded. Their teachings did not advance the art at all. One may conjecture about just what could account for results such as recorded by them. The "concurring" opinion says that Dr. Steenbock (p. 25) "became **convinced** that the improvement in the condition of the rats was attributable, not to the irradiation of the air, but to the irradiation and consequent activation of the sawdust" (R. 3344).

This scarcely accords with the record. We quote a paragraph from a paper (Plaintiff's Exhibit 25, R. 2173, 2224) authored by Dr. Steenbock and one of his graduate student associates (the Dr. Nelson who testified at trial) which paper was received for publication November 13, 1924, some months after the filing of Dr. Steenbock's first application and about a year after his discovery had been made and practiced. The quoted paragraph refers to the Hume & Smith publication and reads as follows:

> "It is always a dangerous matter to attempt to interpret another investigator's findings, because in no case are all the conditions possibly bearing on the outcome of an experiment ever recorded, but, nevertheless, it suggested itself to the authors that Hume and Smith had overlooked the *possible* role of the sawdust with which their animals had been bedded. It is true that they report negative experiments where the irradiated air was blown out of the jars, in which the animals were kept, with a bellows, but unfortunately no mention is made of whether or not the sawdust was thereby removed. Furthermore, no mention is made by the English writers whether or not food and water were removed from the jars previous to irradiation. In view of results, published and unpublished, from this laboratory, this would be of import in evaluating their results."

This paper then refers to "initial experiments essentially according to the technique of Hume and Smith" but concerned with irradiation of screens upon which the rats were kept, and the statement is made at page 2227 "These experiments represented the first attempts to show that *possibly* the sawdust used as bedding for the animals was responsible in Hume and Smith's experiments for such positive results as they obtained."

These experiments were started *after* Dr. Steenbock had hit upon the idea of imparting antirachitic properties to

food substances by exposure to the ultra violet rays emanating from a quartz mercury vapour lamp, and when he assigned to one of his graduate student associates (Dr. Black who testified at trial) the work of practicing his conception, and to the other of his graduate student associates, Dr. Nelson, the work of running the experiments above referred to.

The record does not show that Dr. Steenbock or Dr. Nelson, upon reading the Hume & Smith article, understood it as teaching the presence of sawdust in the jars when they were put under the lamp. It all comes simply to this, that, having run a series of experiments to test out results of procedure such as Hume and Smith's article related, and getting no such results, it was concluded by Dr. Steenbock that, *if the sawdust was in the jars when under the lamp,* improvement in the condition of the rats when put back into the jars *might* be accounted for by their consumption of the irradiated sawdust.

This, we submit, is insufficient basis for taking the Hume and Smith article as *teaching* the irradiation of sawdust, and thus in effect accrediting *them* with the "truly remarkable conception in the then state of the art", which the concurring opinion attributes to Dr. Steenbock.

What was said years ago by the late Judge Shipman in *American Graphophone Co.* v. *Leeds, et al.* 87 F. 873, applies to Dr. Steenbock (p. 877):

> "Bell and Taintor made an actual, living invention which the public are able to use, and a court is not called upon to struggle to decipher an anticipation in the unfinished work and the surmises of earlier students of the same subject."

What was recently said by Judge Learned Hand, speaking for the Court of Appeals for the Second Circuit, in

Dewey & Almy Chemical Co. v. *Mimex Co.*, 124 Fed. 2d 986, is also in point (p. 989):

> "No doctrine of the patent law is better established than that a prior patent or other publication to be an anticipation must bear within its four corners adequate directions for the practice of the patent invalidated. If the earlier disclosure offers no more than a starting point for further experiments, if its teaching will sometimes succeed and sometimes fail, if it does not inform the art without more how to practice the new invention, it has not correspondingly enriched the store of common knowledge, and it is not an anticipation."

Certainly it cannot be said that either the Goldblatt and Soames publication or the Hume and Smith publication anticipates the Second Patent. Assuming, contrary to fact, that the Hume and Smith publication disclosed the antirachitic activation of sawdust, neither that substance nor the livers in Goldblatt and Soames's live rats were "unsaponifiable lipoidal extracts" within, for illustration, claim 3 of the Second Patent, nor did either of these groups of workers inadvertently, accidentally or otherwise teach or hint at the production of an "antirachitically activated substance in *concentrated* form", within the language of that same claim of the Second Patent.

The Third Patent.

The holding of invalidity by the Court of Appeals of claims 3 and 4 of the Third Patent, for laches, runs counter to the decision of this Court in *Overland Motor Co.* v. *Packard Motor Co.*, 274 U. S. 417, distinguishing from *Woodbridge* v. *U. S.*, 263 U. S. 50, cited and quoted in the majority opinion (R. 3340). The instant case is similarly distinguishable. See also *Crown Cork & Seal Co.* v. *Ferdinand Gutmann Co.*, 304 U. S. 159.

In *Overland* v. *Packard fourteen years* elapsed between the filing of an application disclosing and claiming the subject matter in controversy, and the issuance of a patent upon that subject matter as a division of an intervening application. Upon requirement for division of claims in the first application, the disclosure of and claims to said subject matter were cancelled and another application was filed, not as a division but including disclosure of and claims to the same subject matter.

After years of prosecution of the intervening application, one remaining and rejected claim to the subject matter in question was cancelled. There had been no requirement for division, but some months later a divisional application was filed devoted to that subject matter, and the patent in suit issued upon that application.

Here the delay in issuance of the Third Patent was largely due to exactions of Patent Office practice in the matter of allowable scope of applications. An attempt was made to patent yeast activation and the product through the application for the *First* Steenbock Patent. This failed for lack of disclosure (R. 2578). The rejection of the claims on the ground of "new matter" was accompanied by a requirement for division, and one of the several groups of claims specified, was made up of the *yeast* claims but no *divisional* application would have had standing upon *their* subject matter because of lack of disclosure thereof in the First application.

Neither would such claims as 3 and 4 in suit of the Third Patent have been permitted in the application for the Second Patent. In stating otherwise, the majority opinion overlooks the segregation of subjects matter by the Examiner's grouping of claims when acting upon the first amendment to the application for the First Patent (R. 2579). The lines of demarcation thus laid down re-

quired confinement of the parent application to one species, and the applicant chose glycerides. A separate application was filed as a division which application was devoted to the *separation* species—i. e., process of separating unsaponifiable lipoids from the parent substance. While there was included in this application a *disclosure* of yeast activation, the inclusion of *claims* to that, without any reference to the separation process, would *obviously have lead to another requirement for division.* The one claim to yeast that *was* included did have standing because it did relate to the separation species since it claimed a yeast tablet fortified by an activated lipoidal essence.

While Steenbock could have then filed still another application devoted to yeast activation, he did not have to do so and did not have to excuse delay in doing so. *Crown Cork & Seal Co.* v. *Ferdinand Gutmann Co.,* 304 U. S. 159[1].

If he needed an excuse it could be found in the difficulty he was encountering before the Patent Office with the four divisional applications which he did file[2]. Failing to convince the Patent Office that he was entitled to patents upon any of them, he was put to the necessity of filing suit against the Commissioner of Patents in the Supreme Court of the District of Columbia, in which he was successful as to two of the applications,—the one for cereal activation and the one upon which the Second Patent issued. Having thus at last obtained recognition of his right to protection in addition to what his First Patent afforded, he then filed application for the yeast activation process.

---

[1]304 U. S. 167: "It is clear that, in the absence of intervening adverse rights, the decision in *Webster Co.* v. *Splitdorf Co.* does not mean that an excuse must be shown for a lapse of more than two years in presenting the divisional application."

[2]Besides the application for the separation species he filed three other divisional applications, one on activation of cereals, one on activation of milk, and one one activation of solid fats (R. 1718).

No intervening rights having arisen, we submit that, upon authority of *Overland* v. *Packard* and *Crown Cork & Seal* v. *Gutman*, no laches or estoppel can properly be imputed to Steenbock. In the latter case this Court distinguished the cases cited by the Court of Appeals (*Webster Electric Co.* v. *Splitdorf*, 264 U. S. 463 and *Wirebounds Patents Co.* v. *Saranac Automatic Machine Co.*, 65 F. (2d) 904) and they are distinguishable similarly from the instant case.

CONCLUSION.

It is thought that the petition for the writ of certiorari is well grounded and that it should be granted.

Respectfully submitted,

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APPENDIX A.

(Reported in 58 U. S. P. Q. 293)

IN THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE NINTH CIRCUIT

VITAMIN TECHNOLOGISTS, INC., a corporation, *Appellant*, vs. WISCONSIN ALUMNI RESEARCH FOUNDATION, a corporation, *Appellee*.	No. 10,079
WISCONSIN ALUMNI RESEARCH FOUNDATION, a corporation, *Appellant*, vs. VITAMIN TECHNOLOGISTS, INC., and H. F. B. ROESSLER, *Appellees*.	Jun. 30, 1943

Upon Appeals from the District Court of the United States for the Southern District of California, Central Division.

Before: DENMAN, STEPHENS and HEALY, Circuit Judges.

DENMAN, Circuit Judge:

Appellant, hereinafter called Vitamin, appeals from an interlocutory judgment of the district court holding valid and infringed the patents of one Steenbock, Nos. 1,680,818, 1,871,136, and 2,057,399, hereinafter called the First, Second and Third Patents, respectively. The patent rights were acquired by appellee, Wisconsin Alumni Research Foundation, hereinafter called Foundation.

The patents have to do with a process of producing from foods of man and other animals and birds, Vitamin D valuable in the prevention and cure of rickets, by subjecting the

food to radiation of the ultra-violet rays such as are produced by a quartz mercury vapor lamp.

Our consideration of the claims of the First Patent disposes of all the contentions raised on the appeals. Steenbock's granted application for the First Patent states

> "What I regard as new, and desire to secure by Letters Patent, is:
>
> "1. The process of imparting antirachitic properties to organic substances of dietary value (for example carbohydrate foods, fats, oils, protein foods, or composite foods), which comprises subjecting the same to the action of ultra-violet rays, such as are produced by a quartz mercury vapour lamp, for a period sufficient to effect antirachitic activation but so limited as to avoid subsequent substantial injury to the antirachitic principle."[1]

Primarily it is to be noted that the claim applies to all ultra-violet rays. It is not confined to such rays as are produced by a particular medium, such as the quartz lamp. It includes, of course, the ultra-violet rays of the sun.

Many years before the application, science had discovered that the sun's rays shining on cut alfalfa hay cured in the

---

[1]The other claims are

"2. The process set forth in claim 1 as applied to oils and fats containing unsaponifiable lipoids.

"3. The process set forth in claim 1 as applied to naturally liquid glycerides.

"4. The process set forth in claim 1 as applied to olive oil.

"5. Naturally deficient (in the antirachitic factor) food substance antirachitically activated in accordance with the process set forth in claim 1.

"6. The naturally deficient (in the antirachitic factor) liquid glycerides containing constituents antirachitically activated in accordance with the process set forth in claim 1.

"7. Olive oil antirachitically activated in accordance with the process set forth in claim 1.

"8. The process of imparting antirachitic properties to organic substances of dietary value (for example carbohydrate foods, fats, oils, protein foods, or composite foods), which comprises subjecting the same to the action of ultra-violet rays, such as are produced by a quartz mercury vapour lamp, for a period sufficient to effect antirachitic activation but so limited as to avoid subsequent substantial injury to either the antirachitis principle or the palatability."

field was an antirachitic food for pigs. Prior to 1923, Foundation's expert witness, Dr. Nelson, testified that it was shown as a natural process that vegetable matter, not only cut hay but copra, the cut meat of the cocoanut, when exposed to the sun's ultra-violet rays produced the antirachitic substance later called Vitamin D. Dr. Nelson also stated that the long prior process of exposing milk to ultra-violet rays would produce in it Vitamin D. Steenbock himself verified the facts concerning alfalfa by the discovery that when cured out of the sunlight it lacked the antirachitic quality created when cured in the field.

We thus have the claimed inventor proving that it is from the ultra-violet rays of the sun that the alfalfa acquires its Vitamin D, that is, by the process claimed by him as patentable. If the patent be valid, it is thus seen that the farmer is an infringer when he exposes his cut alfalfa to the ultra-violet rays of the sun long enough to make it antirachitic. So also the long previously established practice of the radiation of milk by the mercury vapor lamp would infringe the monopoly of Steenbock's patent because, admittedly, in its customary use it would produce in the milk Vitamin D.

Steenbock had been preceded by the discovery by Hume and Smith of the fact that rats, made rachitic for the purposes of scientific study, had their condition improved when placed in a cage with a floor of sawdust into which the ultra-violet rays had been radiated from a mercury vapor quartz lamp. They thought the radiation of the air the cause of the improvement. Steenbock discovered the improvement was caused by the antirachitic quality of the sawdust eaten by the rats. He did not invent a method but merely discovered what happened in the prior known process.

Steenbock was long preceded by the discovery that rickets in human beings was aided or cured by exposure of the human skin to these ultra-violet rays of the sun or lamp. From Steenbock we know that what the process did is the activation with the rays of the antirachitic substance in fatty flesh under the skin—that is, in a sense, stored food—which substance is carried by the blood stream to the bone-forming agencies of the body. So also Goldblatt and Soames discovered that ultra-violet radiation from the quartz mer-

cury vapor lamp on rachitic rats produced in them livers which when fed to other rachitic rats aided or cured their rickets. Steenbock's discovery shows that what this method of applying the rays did was to produce Vitamin D in the rats' livers, but the method already had produced the Vitamin D.

The district court found that the First Patent

> "* * * covers a process employing an artificial activating agency in such a manner as to accomplish what the natural agency does not and cannot do. * * *."

and that

> "24. Nature, unaided by man, does not and cannot antirachitically activate foods or medicines. * * *."

In this the district court erred. Vitamin D is produced by the ultra-violet rays of the sun penetrating vegetable matter, whether cut by wind or falling to the ground or by man in immemorial agricultural practice. It also was for a long time produced in food by ultra-violet lamp rays. Dr. Steenbock invented nothing in the way of mechanical or chemical processes.

Dr. Steenbock's great contribution to science and to human needs was his more exact *recognition* of what had transpired in all these prior practical uses of the ultra-violet rays in producing the then unnamed Vitamin D in food substances.

The clear vision of such a scientific investigator as Dr. Steenbock well may create a vastly higher indebtedness from the world of human beings than owed to the inventors of mechanisms and processes to whom his vision is the inspiration. However our Congress as yet has provided no system of reward to the pure scientist, while it has to the inventor for his processes and mechanisms. Steenbock's valuable scientific certitudes are discoveries, but they are not inventions within the meaning of the term "invention" as used by the Congress in its patent laws. This court so determined in one of the able opinions of District Judge Hawley in Wall v. Leck, 66 Fed. 552 (CCA-9).

In that case invention was claimed in the discovery that a known process of applying hydrocyanic gas to fruit trees by conducting it to and into a canvas container enveloping the trees to destroy certain damaging insects, would be economically successful if applied at night when the sun's rays could not reach the gas. When applied in the daytime the insects were killed but the effect of combining the sun's rays with the gas was to injure the tree.

As with the long prior use of the lamps to project ultraviolet rays on food substances, here was the prior use of the apparatus of the canvas bag. There was nothing but the discovery that the sun's rays combining with the hydrocyanic gas was the reason for the difficulty in obtaining economically successful results in a prior use. In holding invalid the claimed patent, this court said (pp. 555-558),

> "But in this connection we are brought back to the fact that appellants in their letters patent only pointed out the way by the use of a natural condition of nature's laws. *They did not invent any new process, chemical or otherwise, whereby the force of nature was to be controlled.* * * * Their discovery, which is conceded to be valuable and of great benefit, was that the old process of fumigating trees by means of an oiled tent and hydrocyanic acid gas, both of which were old and free to the public, could be made successful 'provided the fumigation is done at night.' [Steenbock did not even do this much.] * * * Such a discovery, however new and valuable it may be, is not within the pale of patentable inventions. It does not come within any of the principles of the patent law, or any of the provisions of the statute relating to patents. A mere naked principle, a law of nature, or property of matter cannot be patented. So long as the principle is a mere item of knowledge, and sometimes from its nature it must always remain such, no patent can be held valid, however brilliant and useful the discovery may be. * * *
>
> "* * * No natural function of the day or of the night, of the sun or of the moon, is patentable. These na-

tural conditions are as free to all mankind as is the air we breathe. The broad canopy of heaven can be used in the daytime, or the night-time, and at all times, in sunshine or in darkness, by everybody, in the presence or the absence of any rays of light, or any condition of the atmosphere. *A principle, considered as a natural physical force, is not the product of inventive skill. It is the common property of all mankind. It exists in nature independently of human effort, and can neither be diminished nor increased by human power.* [Steenbock has not diminished nor increased anything. He used the same lamp and process Hume and Smith and Goldblatt and Soames used and produced the same antirachitic factor.] *Man can discover and employ it, but his employment of it in the modes or through the instrumentalities by which it is applied in nature is a mere imitation of what every man is able to perceive and reproduce as well as he. All endeavors to confine it to himself are at once futile and unjust. It exists for all men, as well after his discovery as before. The laws necessarily recognize and protect this right, and do not permit any man to exclusively use the conditions which are the gifts of nature, simply because he was the first one to discover its value.* [Steenbock was not the first to discover the value of irradiation by ultra-violet rays. The value of sun irradiation and activation was established; the value of sun or artificial irradiation of man and animal was established; and the value of irradiation of other materials had been established.] Not until some *new instrument or method* is contrived for its direction towards ends which it cannot naturally accomplish does his creative genius manifest itself. * * *" (Emphasis supplied.)

Holding similarly with reference to monopolizing natural processes, the Court of Patent Appeals said

> "As the court views the matter, nothing inventive over the prior art is disclosed in this application. As a result of the researches of the applicants, an ex-

planation had been made of certain *natural* reactions which have been known to the art to occur, *but which were imperfectly understood. This does not, however, amount to invention.* In re Langdon, 77 F. 2d 920, 22 C. C. P. A. (Patents) 1245." (Emphasis supplied.)

In re Boyd, 90 F. 2d 130, 132.

Apart from the First Patent's attempt to monopolize a natural process, this court has held that it is a well established principle that if a process is disclosed in the prior art, a patent whose validity is attacked is anticipated even though the prior patent failed to state and the inventor did not know that his invention brought the process into operation. In Celite Corporation v. Dicalite Co., 96 F. 2d 242, 248 (CCA-9), we stated

"* * * In answer to appellant's contention that the purpose of the North process was simply to remove organic matter and bleach the product, it is sufficient to state that, as the patented process in suit was disclosed by the North patent, it was anticipated by that process even though it be assumed that the North patent failed to state, and that North did not know of the increased flow rate of the product produced * * *."

We hold that the First Patent is invalid because it was old in the art to expose various foods of dietary value, such as olive oil and milk, to lamp radiated ultra-violet rays, and ages old to expose cut vegetable matter to such rays of the sun.

The same reasoning makes invalid the Second Patent which claims patentable the process of applying the ultra-violet rays to fatty material, whereby the unsaponifiable portions are activated and Vitamin D produced. The first claim of the Second Patent, typical of the others, is

"1. The process of producing a concentrated anti-rachitically activated substance from substances rich

> in unsaponifiable lipoids, which comprises separation and irradiation of said unsaponifiable lipoids, such irradiation being effected by subjecting the lipoids, before or after separation, to the action of ultra violet rays, such as emanate from a quartz mercury vapor lamp for a period sufficient to effect antirachitic activation, but so limited as to avoid subsequent substantial injury to the antirachitic principle."

No new process of treatment of the lipoids was described. Vitamin D had been produced in many of the lipoids by the application's methods long before the patentee's application was filed. All that was done by him, important and valuable as it may be, was the discovery that in these prior processes Vitamin D had been created.

The Third Patent is confined to the production of Vitamin D from yeast. Its first and typical claim is

> "1. The process of producing an antirachitically activated product which comprises: subjecting yeast to the action of light comprising ultra-violet rays for a period sufficient to effect substantial antirachitic activation of the yeast."

The First Patent makes a similar claim for all food materials. Whether yeast enters the human body when directly eaten or eaten in bread, we regard it as one of the foods covered by the claim of the First Patent and hence the Third Patent is void for a double attempt to patent an unpatentable process.

The appeal of Vitamin is sustained as to all three patents.

Foundation cross-appealed from the judgment holding that cross-appellee Roessler had not infringed any of the patents. Since the patents are invalid, he could not have infringed them.

The judgment is reversed as to the appeal of Vitamin and affirmed as to the cross-appeal of Foundation.

HEALY, C. J. Concurring

However plain may be the applicable principles of the patent law, the subject matter of this suit is itself extremely complex; and any layman must feel a natural hesitancy in making pronouncements in respect of it. It is only too easy for him to misunderstand or to oversimplify. I do not doubt that Dr. Steenbock must be accounted a pioneer in his special field, namely, the artificial activation of vitamin D in foods. His researches illuminated some very dark places and brought about a clearer understanding of a natural phenomenon that before his time was seen as through a glass, darkly.

But I agree that Dr. Steenbock did not invent anything. The antirachitic properties of the vitamin D principle were well known, if imperfectly understood, prior to Steenbock. It had been recognized that these properties are present naturally and abundantly in many organic substances, notably in cod-liver oil. Vitamin D had also been produced in an artificial way by a process of irradiating living tissues with the mercury vapour lamp. As early as 1919 Huldschinsky had found that rickets could be cured by exposure of the patient to the ultra-violet rays of that lamp. Use of the lamp for activating vitamin D in inert substances, as distinguished from the activation of the principle in the living tissue of the patient himself, may possibly be another matter; and what is claimed for Dr. Steenbock is that he discovered or invented a process for the activation of the vitamin in edible substances through employment of this lamp, or similar available apparatus.

I do not read the claims of his patents as broadly as the main opinion does; and for the purpose of the discussion I

have assumed, also, that the activation of living tissues by exposing the subject to the ultra-violet rays of the mercury vapour lamp is a different process from that Steenbock is said to have invented. The validity of the later assumption is questionable. The one thing that can certainly be attributed to Steenbock is the conception—a truly remarkable conception in the then state of knowledge—that the artificial irradiation of certain foods with ultra-violet light confers upon the food the power of preventing the occurrence of rickets, or, to put it another way, produces vitamin D.

But recognition is not invention. In the use of this artificial process Dr. Steenbock was substantially anticipated. In 1923 Hume and Smith published a paper giving an account of their experiments with rats which had been rendered rachitic by placing them on a diet deficient in fat-soluble vitamins. The experiments were conducted in this manner: The rats were put in glass jars containing sawdust at the bottom. The animals were later removed from the jars, and the jars placed below a mercury vapour quartz lamp so that the light shone directly down into them. After ten minutes these containers were covered with glass lids and were moved, whereupon the rats were put back in the jars and the covers temporarily replaced to hinder diffusion of the air. Thereafter the animals showed marked improvement in growth and weight, a result attributed by Hume and Smith to the irradiation of the air in the containers.

Dr. Steenbock was familiar with this experiment. After studies and experiments of his own he became convinced that the improvement in the condition of the rats was attributable, not to the irradiation of the air, but to the irradiation and consequent activation of the sawdust, which is edible to rats. In other words, Dr. Steenbock accurately

interpreted the results of Hume and Smith's experiments, the significance of which the latter themselves totally failed to comprehend.

In the same year Goldblatt and Soames published an account of another experiment, with which, also, Steenbock was familiar. They irradiated live rats with a quartz mercury vapour lamp, after which the livers were removed and fed to rachitic rats, with resultant marked improvement in growth. Thus by these scientists as well as by Hume and Smith the actual process of irradiating edible substances with the mercury vapour lamp had already been publicly practiced. I think, therefore, that Steenbock can not fairly be said to be the originator of the process. His contribution to the art lies, rather, in his interpretation of the results achieved by the process.

But Steenbock's patents, as the court has observed, are subject to an infirmity more fundamental still. Ultra-violet light is a natural form of energy which man may isolate or control, but which he can not create. Like the sun, which is the source of that energy, and like the air we breathe, ultra-violet rays are the property of all mankind. Men may devise or improve machines for their more effective utilization and may obtain patents upon the machine or the improvement. But it would be a monstrous thing if the energy itself or its use could in any way be made the subject of a monopoly. Sunlight, by its own inherent process, activates the vitamin D principle in organic substances, albeit apparently not in all of them. The intervention of the mercury vapour lamp may adapt this process to wider fields, but in a patentable sense the process itself is as ancient as the sun.

(Endorsed): Opinion and Concurring Opinion. Filed Jun. 30, 1943. Paul P. O'Brien, Clerk.

FILED
MAY 28 1945

IN THE

Supreme Court of the United States

OCTOBER TERM, 1944.

No. 1193

WISCONSIN ALUMNI RESEARCH FOUNDATION,

Petitioner,

vs.

VITAMIN TECHNOLOGISTS, INC., and H. F. B. ROESSLER,

Respondents.

RESPONDENT'S BRIEF IN OPPOSITION TO THE PETITION FOR CERTIORARI.

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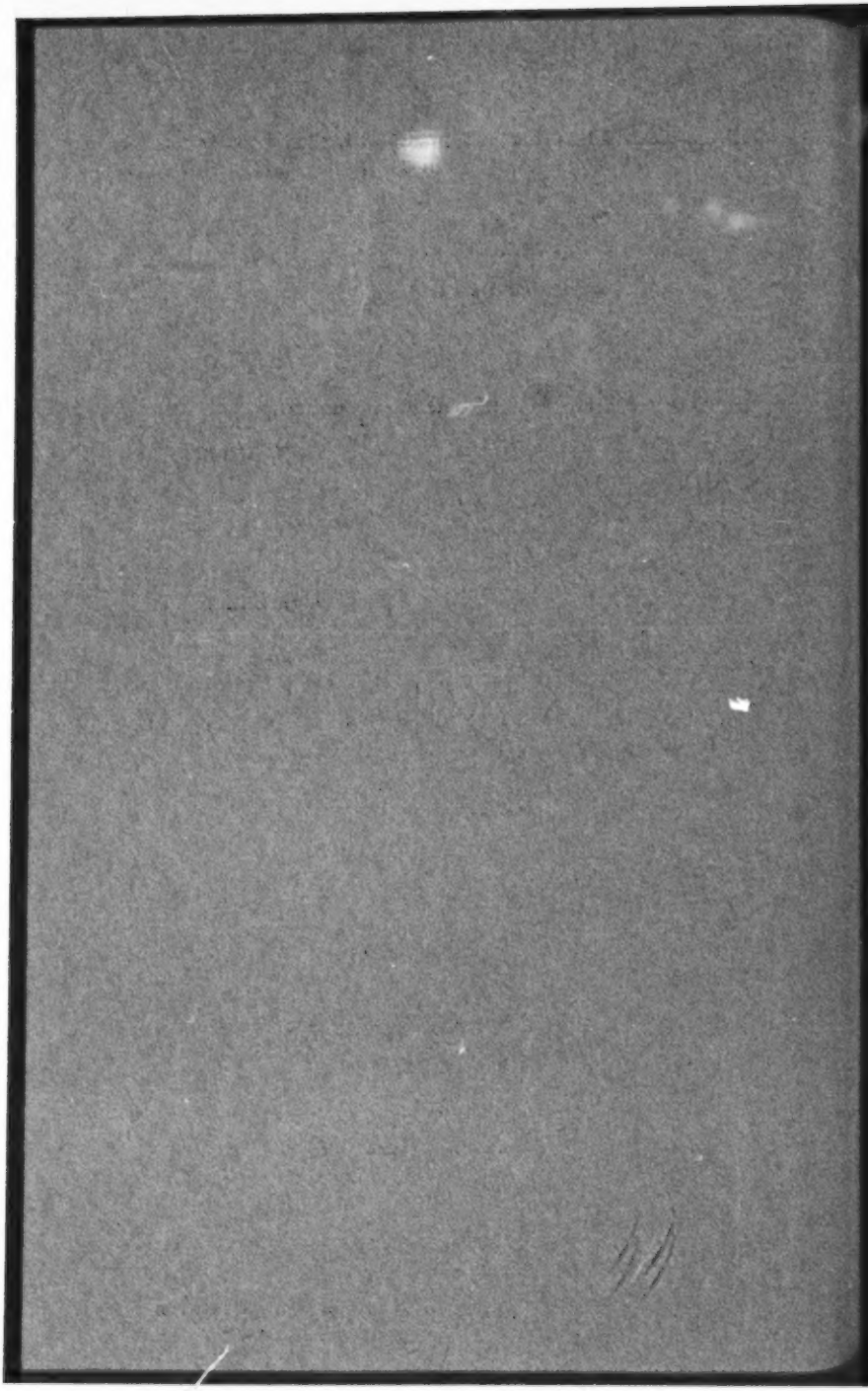

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IN THE

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OCTOBER TERM, 1944.
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WISCONSIN ALUMNI RESEARCH FOUNDATION,
Petitioner,

vs.

VITAMIN TECHNOLOGISTS, INC., and H. F. B. ROESSLER,
Respondents.

RESPONDENT'S BRIEF IN OPPOSITION TO THE PETITION FOR CERTIORARI.

To the Honorable Chief Justice and Associate Justices of the Supreme Court of the United States:

The petition for certiorari herein formulates ten questions (Petition pp. 6-10) which petitioner asks this Court to consider and adjudicate. These "Questions Presented" comprehend two distinct subject matters. Some of the "Questions Presented" by the petitioner are incomplete, misleading, superfluous, and are not based on the facts in this case.

The first and second questions presented relate to the Petitioner's misuse of its patents in suit. However, the opinions of the Circuit Court of Appeals [R. 3308-3346, 3478-3486] clearly demonstrate that neither of said questions is involved in this case.

Petitioner's Questions 1 and 2. Re Misuse of Patents.
(Petitioner's Br. pp. 29-34.)

The questions with respect to the petitioner's misuse of its patents (Questions Presented 1 and 2, pp. 6 and 7) cannot be properly raised or presented in the petition for certiorari because the Circuit Court of Appeals did not base its decision on that ground. Although the Circuit Court of Appeals said that the petitioner's acts "*warrants* the refusal of the equitable injunctive and accounting relief sought," nevertheless the Court held that the public interest is served better by holding that the patents are invalid. The opinion of the Court is explicit in this respect and reads as follows:

> "* * * Since our consideration of the record convinces us that the patents are invalid, we have concluded that equity will best be served by disposing of the case on that ground." [R. 3322, 146 F. (2d) 941, at pp. 946, 947.]
>
> "* * * We further hold that such refusal to permit such irradiation warrants the refusal of the equitable injunctive and accounting relief sought by the corporation, though we hold the public interest is served better by our decision that the patents are invalid." [R. 3485, 146 F. (2d) 941, at p. 956.]

Even though the lower Court had based its decision on that ground the first question is at least superfluous since it makes no mention whatever of either the public interest or of the public health involved.

If the first or second question were involved in this case (and we respectfully submit neither of said questions is properly presented herein), respondent* would strongly

---

*The corporate respondent will be referred to as the respondent herein, since this petition is not concerned with the dismissal as to individual liability of defendant Roessler. (Petition p. 1.)

contend that the question should necessarily be answered in the affirmative.

Furthermore, even though the Circuit Court of Appeals had based its decision on the petitioner's refusal to permit its processes to be used in the irradiation of oleomargarine, and thus prevent the aid to or cure of rickets in its consumers, the Court would merely have been following the principle established in many recent decisions of this Court. See *Morton Salt Co. v. G. S. Suppiger Co.*, 314 U. S. 488; *United States v. Masonite Corp.*, 316 U. S. 241; *Mercoid Corp. v. Mid-Continent Inv. Co.*, 320 U. S. 661, and other cases cited by the Circuit Court of Appeals in the majority opinion of the Court. [R. 3314-3322, 146 F. (2d) 941, 944-946.]

This Court said in *Morton Salt Co. v. G. S. Suppiger Co., supra*, at page 33:

> "* * * The patentee, like these other holders of an exclusive privilege granted in the furtherance of a public policy, may not claim protection of his grant by the courts where it is being used to subvert that policy."

Petitioner contends that the decision of the Circuit Court of Appeals in this respect is "in direct conflict with the decision of this Court in the Paper Bag Patent Case (Continental Paper Bag Company v. Eastern Paper Bag Company, 210 U. S. 405)." That contention cannot stand for two reasons, namely:

1. As shown above, the Circuit Court did not base its decision on the petitioner's misuse of its patents, and

2. As stated in the majority opinion [R. 3321]:

> "* * * There (referring to Paper Bag case) it is held that the suppression of the use of a patent for

paper bags was not against the public interest, but the Court's opinion, at page 430, concludes with this statement '* * * Whether, however, a case cannot arise where, regarding the situation of the parties in view of the public interest, a court of equity might be justified in withholding relief by injunction, we do not decide.'" (Parentheses added.)

There was no disagreement between the three Circuit Judges on this matter. All three Judges concurred in concluding that the refusal was unwarranted, against the public interest, and warranted the refusal of the equitable relief sought by petitioner. [R. 3485, 146 F. (2d) at p. 956.]

Furthermore, even if the first and second questions were properly presented, the petition should still be denied, in that with respect to the remaining questions, this case is an ordinary patent infringement case with the usual issues of anticipation and invention, with no conflict of decision with respect to the petitioner's patents between two Circuit Courts of Appeals. This Court has consistently held that the writ of certiorari will not issue to review the questions of anticipation, invention, and infringement unless it is necessary to reconcile decisions of Circuit Courts of Appeals on the same patent. *United States v. Johnson*, 268 U. S. 220; *Magnum Import Co. v. Coty*, 262 U. S. 159, 163.

A decision on the first and second questions propounded alone would not entitle the petitioner to prevail, since the respondent would still prevail by reason of the Court's decision that the patents in suit are invalid.

In *Layne & Bowler Corporation v. Western Well Works, Inc., et al.*, 261 U. S. 387, this Court said at page 393:

> "* * * it is very important that we be consistent in not granting the writ of certiorari except in cases involving principles the settlement of which is of importance to the public as distinguished from that of the parties, and in cases where there is a real and embarrassing conflict of opinion and authority between the circuit courts of appeal. * * *"

In *Keller v. Adams-Campbell Co.*, 264 U. S. 314, this Court said at page 319:

> "* * * Such an ordinary patent case with the usual issues of invention, breadth of claims and non-infringement, this Court will not bring here by certiorari unless it be necessary to reconcile decisions of Circuit Courts of Appeal on the same patent. * * *"

The decision of this Court in *General Talking Pictures Corp. v. Western Electric Co.*, 304 U. S. 175. on pages 178 and 179, states the law as follows:

> "* * * Granting of the writ would not be warranted merely to review the evidence or inferences drawn from it. * * * Nor would the writ be granted to review the questions of anticipation and invention that petitioner argues, for as to them there is no conflict between decisions of circuit courts of appeals. * * *"

From the above, it is evident that this Court would not grant a writ of certiorari in this case if the Circuit Court of Appeals had made no mention whatever of the petitioner's misuse of its patents. The fact that the petitioner has misused its patent should not be the basis of

giving it another hearing on matters peculiar to this controversy.

The petitioner (Petition p. 11) urges that an exception be made to the general rule set forth above because of:

(1) The divergence of views expressed in the opinions below,

(2) The importance of the questions propounded, and

(3) The conflict between the decision of the Court of Appeals and previous decisions of this Court.

With respect to these matters, we respectfully submit:

(1) That the divergence of views expressed by the Circuit Court Judges does not warrant the granting of certiorari, since as stated in the cases quoted from above "there must be a real and embarrassing conflict of opinion and authority between the Circuit Courts of Appeal." Although the petitioner contends that there is a divergence of views expressed in the opinions below as to most of the questions propounded, there is no basis for this contention as we will demonstrate to this Court in a later section entitled "Alleged Divergence of Views Expressed in Opinions of the Circuit Court of Appeals."

(2) The case does not involve any principle which is of importance to the public, other than the questions with respect to the misuse of the patents, and, as shown above, the Circuit Court of Appeals did not base its decision on the misuse of the patents.

(3) There is no merit in the petitioner's contention that the decision in this case conflicts with previous decisions of this Court.

See also the statement in Robertson and Kirkham, "Jurisdiction of the Supreme Court of the United States," 1936 (West Publishing Co., St. Paul, Minn., publishers), on page 665, which reads as follows:

> "* * * In addition, in the usual course of litigation of ordinary issues of patent validity and infringement, the opportunity exists and is exercised of having suits involving the same or substantially the same issues, brought and determined in several circuits; and in this process it may reasonably be expected that issues of fact will be thoroughly explored by the courts primarily charged with the duty of determining patent controversies, and that any error in the appreciation of facts will ultimately show in conflicting decisions."

The above statement is particularly true in this case. Petitioner instituted an action in the District Court of the United States for the Northern District of Illinois, Eastern Division, against Rene Douglas, doing business as Douglas Laboratories, Case No. 43C-704, for the alleged infringement of the first two patents in this cause. The United States of America, by its attorneys, intervened and as counter-claimant filed a counterclaim against petitioner; E. I. DuPont de Nemours and Company; The Quaker Oats Company; Standard Brands Incorporated; Gelatin Products Corporation; The Borden Company; Carnation Company; Pet Milk Company; Indiana Condensed Milk Company; Nestle's Milk Products, Inc.; Vitamins, Inc.; Abbott Laboratories; Mead Johnson & Company; The Wm. S. Merrell Company; Parke, Davis

& Company; E. R. Squibb & Sons; Winthrop Chemical Company, Inc., and Charles Bowman, as counter-defendants, based upon the misuse of said patents by the petitioner herein and the above-named counter-defendants. Respondent is informed and believes that said action is still pending and that it has not been brought to trial to date. Respondent is a small corporation with limited funds and was financially unable to explore the question of the misuse of the patents by the petitioner and its licensees in detail. In fact, respondent did little more than compel the petitioner to disclose the license agreements which are in evidence. The attorneys for the United States of America will undoubtedly prove many more facts dealing with the misuse of the patents in suit. We therefore submit that the pendency of the above-mentioned suit against Rene Douglas is another reason why the petition for certiorari should be denied.

First Patent.

The third, fourth, seventh, eighth and ninth questions are directed *solely* to the *first patent*, that is, patent number 1,680,818, dated August 14, 1928. Questions five and six are directed to the first and second patents. In order for the petitioner to prevail on the first patent, each and every one of the first nine questions presented must be answered in accordance with the petitioner's contentions.

Furthermore, it should be noted that the first patent expires on August 14, 1945. [R. 2277.]

Petitioner's Third and Fourth Questions. Re Scope of Claims. (Petitioner's Br. pp. 35-43.)

These questions relate to the validity of the first patent and are purely questions of fact. No question of law is involved. That this is true is clearly shown by the fact that the petitioner cites no cases whatever with respect to these questions other than *Vegetable Oil Products Co. v. Dorward & Sons Co.*, 60 U. S. P. Q. 4, 53 F. Supp. 281. (Petitioner's Br. p. 42.) This case was cited on the point as to whether or not the process is nothing more or less than a law of natural science and therefore is not patentable, which is not in point as to either the third or fourth question.

Furthermore, both the third and fourth questions presented are incomplete and misleading. For example, neither question makes any mention of the following facts:

(1) that the specification states that a quartz mercury vapor light, "open flame carbon arc, or other source of light may be employed in effecting the activation" [R. 2278];

(2) that Dr. Steenbock testified that he had tried sunlight and got activation prior to the filing of the application [R. 537];

(3) that the claims not only cover, but were also intended to cover solar irradiation, and

(4) that the alleged disclaimer was inserted in the specification after the application was filed, at the time a limited claim was added, and that thereafter, the limited claim was abandoned, and the all-inclusive claim in the patent was obtained.

all of which appears in much more detail in the majority opinion. [R. 3322-3330, 146 F. (2d), at pp. 947 and 948.]

Petitioner's Fifth and Sixth Questions. Re Claims Indefinite. (Petitioner's Br. pp. 43-56.)

Here again, petitioner is seeking a review of the evidence. It is attempting to distinguish the *General Electric Co. v. Wabash Co.*, 304 U. S. 364, and *United Carbon Co. v. Binney and Smith Co.*, 317 U. S. 228, cases because the claims in said cases "purported to define a product by its structural characteristics or physical form," whereas petitioner's claims "are claims for processes and resultant products that are not structurally definable." The majority opinion in disposing of this contention said [R. 3338]:

> "* * * There seems no distinction in principle between inadequate limitation of the monopoly area in such product and process claims."

That the majority opinion correctly disposed of the petitioner's contention is clearly shown by an analysis of this Court's opinions in the above-mentioned cases.

In *United Carbon Co. v. Binney & Smith Co.*, 317 U. S. 228, this Court held:

> "* * * Whether the vagueness of the claim has its source in the language employed or in the somewhat indeterminate character of the advance claimed to have been made in the art is not material. An invention must be capable of accurate definition, and it must be accurately defined, to be patentable. * * *"

In the *General Electric Co. v. Wabash Corp., supra*, this Court after holding that the patent under consideration failed to satisfy the requirements of R. S. 4888, 35 U. S. C. A. 33, which requires that the applicant "shall

particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery," said (304 U. S. 364 at p. 369):

> "* * * Patents, whether basic or for improvement, must comply accurately and precisely with the statutory requirement as to claims of invention or discovery. The limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public. The statute seeks to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their rights. The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.' The claims 'measure the invention.' * * *"

The above excerpt is quoted in both the aforesaid *United Carbon Co. v. Binney & Smith* case, *supra*, and in the majority opinion at pages 3332-3333 of the Record.

All of the claims of the first and second patents describe the function of exposure as "for a period *sufficient* to effect antirachitic activation but so limited as to avoid subsequent *substantial injury* of the antirachitic principle." As stated in the majority opinion, this language is too vague and uncertain a description of the process to "inform the public . . . of the limits of the monopoly asserted," as stated in the above-mentioned cases of this Court.

This is particularly true in this case since, as the majority opinion states [R. 3335-3336]:

> "There were many published ways in which the ultra violet rays were used to affect the chemistry of food prior to the filing of the first application on June 30, 1924. * * * In all these and other developments of the prior art and patenting, none of those discovering or seeking to discover valuable uses of the lamp's rays could determine just where Dr. Steenbock's 'sufficiency' of exposure would be infringed."

The function of exposure "so as to avoid subsequent substantial injury to the antirachitic factor" has no basis in fact, but is a mere economic or physiological factor, old in the art, a functional statement at the alleged point of novelty, vague and indefinite, and must be determined by experimentation. For example, with respect to whether the limitation in the claim meant from the standpoint of economic profit or dietary efficiency, the majority opinion, after quoting from Dr. Steenbock's testimony, states [R. 3335]:

> "* * * As to economic substantial injury, one who successfully activates food by the ultra violet rays would not violate the patent if the ultra violet rays were used sufficiently to cause an economic loss; while another would infringe if he processed a slightly more activated food at an economic gain. Or assuming two producers of irradiated foods of the same degree of exposure on the borderline of substantial injury, one of whom is a skillful salesman, the other less so. The first makes an economic gain and infringes; the second an economic loss and hence cannot be enjoined from further production of irradiated foods.

"Similarly as to the physiological effects of a 50 percent injury to the antirachitic factor from the function of over exposure, of which Dr. Steenbock speaks. If 50 percent injury be not substantial and 51 percent is substantial, the manufacturer of a product 51 percent injured by over exposure would not infringe."

Furthermore, this Court in *National Grain Yeast Corp.*, 308 U. S. 34, held a process patent invalid, holding at page 38:

"* * * But even if the process disclosed by Hayduck be held to constitute invention, the patent is invalid for indefiniteness as was held by the learned District Judge. Both the times and manner in which the concentrated nutrient solution is to be added may be ascertained as we have stated solely by experimentation. The disclosure of the patent is therefore too vague and indefinite to constitute invention."

The rule of the *General Electric Co. v. Wabash Corp.* case, *supra,* was applied in *Farmers' Cooperative Exchange v. Turnbow,* 111 F. (2d) 728.

The cases cited by the petitioner in connection with this question on pages 50-53 of its brief do not sustain the petitioner's contentions and are not applicable.

In none of the cases cited by the petitioner was the contention made that the claims were invalid because of indefiniteness, that is, because of the failure of the inventor "to inform the public during the life of the patent of the limits of the monopoly asserted."

In *Minerals Separation, Ltd., v. Hyde,* 242 U. S. 261, the contention was made that the claims were invalid for the reason that when different ores are treated preliminary tests had to be made to determine the amount of oil

and the extent of agitation necessary to obtain the best results—an entirely different question. In disposing of this contention, this Court held that the claims that included the "critical proportions" were valid and that the other claims were invalid. (The claims of the patent appear in the opinion of the Circuit Court of Appeals, 214 Fed. 100.) The language of this Court is as follows:

> "* * * the patent must be confined to the results obtained by the use of oil within the proportions often described in the testimony and in the claims of the patent as 'critical proportions' 'amounting to a fraction of one per cent. on the ore,' and therefore the decree of this court will be that the patent is valid as to claims Nos. 1, 2, 3, 5, 6, 7 and 12, and that the defendant infringed these claims, but that it is invalid as to claims 9, 10 and 11. * * *" (242 U. S. 261 at p. 271.)

The case at bar involves an entirely different factual situation. As stated above, the majority opinion held that the function of exposure as set forth in the claims "may mean (a) a sufficient substantial functioning from the viewpoint of economic profit or (b) from the viewpoint of its dietary efficiency." [R. 3333.]

The claims of the patents do not contain any critical limitations and differ from the prior art only in the use of conveniently functional language at the alleged point of novelty. The function of exposure is defined as "for a period sufficient to effect anti-rachitic activation but so limited as to avoid subsequent substantial injury of the antirachitic principle." [R. 2280.]

Neither of the specifications of the patents disclose how you would tell when the antirachitic principle has been imparted [R. 299], when the antirachitic principle is destroyed [R. 285, 299] or how to determine when "substantial injury to the antirachitic principle" occurs. In addition thereto, the record clearly shows that the first and second patents fail to disclose (1) how the intensity of the light affects the time of treatment, (2) how the distance of the material from the light source affects the time of treatment, (3) when to increase or decrease the time of treatment [R. 233], (4) when to increase or decrease the distance [R. 233], (5) what the various factors entering into the treatment of a material are, or when or how these factors will vary with the method employed [R. 233], (6) how intensity should be varied in treating different materials [R. 234], (7) how you would determine when a substance is antirachitic, (8) when a substance is overexposed [R. 299], (9) what maximum activation is [R. 315], (10) how a person would determine what is maximum activation [R. 315], or (11) what constitutes "substantial injury to the antirachitic factor."

As stated above, the other cases cited by the petitioner on pages 51 and 52 of its brief, namely, *Carnegie Steel Co. v. Cambria Iron Co.*, 185 U. S. 403; *Smith v. Snow*, 294 U. S. 1; *Waxham v. Smith*, 294 U. S. 20, and *Fullerton Walnut Growers Association v. Anderson-Barngrover Mfg. Co.*, 166 Fed. 443, are also not in point.

Because the claims of the patents are indefinite and functional at the alleged point of novelty, research and

progress in the field of irradiation is coerced. The language in the opinion is as follows:

> "* * * If the menace of doubt as to the excluded area of exposure hang over the scientific world there would be the weakening of inventive energy in this field, considered in the United Carbon and General Electric cases, *supra*." [R. 3336, 146 F. (2d) at p. 951.]

We submit that the claims are indefinite and that they are therefore invalid in that they fail to comply with the requirements of R. S. 4888, 35 U. S. C. A.

Petitioner's Seventh, Eighth and Ninth Questions. Re Hume and Smith and Goldblatt and Soames Publications. (Petitioner's Br. pp. 56-61.)

These questions relate solely to the Hume and Smith and Goldblatt and Soames publications. No question of law is presented. Petitioner is merely seeking to have this Court review the evidence and discuss particular facts in order to give the petitioner another hearing on matters peculiar to this controversy. As stated above, the writ of certiorari will not be granted "to review the questions of anticipation and invention" unless there is a conflict between decisions of Circuit Courts of Appeal.

The questions are obviously incomplete, misleading, and not based on the facts of this case. Complete answers with respect to the disclosures of the Hume and Smith and Goldblatt and Soames publications are found in the majority opinion on page 3366 of the record, and in the

minority opinion on pages 3343 and 3344 of the record, and will therefore not be repeated herein.

The American Graphophone Co. v. Leeds, et al., 87 F. 873 and *Dewey & Almy Chemical Co. v. Mimex Co.*, 124 F. (2d) 986, cases cited by the petitioner on pages 60-61 of its brief, relate to alleged anticipations which did not disclose the invention and are therefore not in point.

For example, with respect to the Hume and Smith publication, Ex. E-20, Steenbock and Nelson studied the publication, but did not agree with the positive results reported. See Ex. E-26, R. 2222. Dr. Nelson testified [Tr. 158] as follows:

> "* * * *In studying these results and attempting to justify the interpretations placed* upon them * * *. The British investigators Hume and Smith had not made clear whether or not they had removed everything from the jars when they were irradiated. They didn't state whether they had removed the food or the water that was normally kept in the cages or any litter, such as sawdust or shavings, usually kept in the bottom of the jar. *I then outlined certain studies to attempt to establish what the facts were and what factors were operative in these observations.* * * *." (Italics added.)

Not only did Dr. Steenbock and Dr. Nelson undertake this work, but when they conducted their experiments they reached an obvious conclusion and a logical interpretation of what Hume and Smith did. It is to be particularly noted that the conclusion was obvious and that the inter-

pretation was logical. Dr. Nelson's testimony is as follows [Tr. 161-162]:

> "* * * *This, obviously, led to the conclusion that there was something on these screens that was kept below the animals and which had been used before they were irradiated, that is, that there was something on the surface of those screens which was being affected by ultra violet rays and producing the growth effect on the animals.* * * *." (Italics added.)

In other words, this was not a case of creating something new but merely the demonstration of what had been done by Hume and Smith.

The same is true with respect to the Goldblatt and Soames publication, Ex. E-21. Steenbock's work merely duplicated the results reported by Goldblatt and Soames. His work involved no new thought and he produced no new result. Steenbock and Nelson admitted that the Goldblatt and Soames publication, Ex. E-21, teaches that they (1) were interested in rickets [R. 327]; (2) worked with rats suffering with rickets [R. 1758-1759]; (3) irradiated rachitic rats [R. 2866]; (4) produced Vitamin D in the liver of the irradiated rats [R. 218-19]; (5) found that the liver irradiated in the living rat was activated [R. 2100]; (6) fed the antirachitically activated liver to rachitic rats and cured rickets [R. 219]; (7) and the irradiation produced something in the rat which could be fed another rat to cure rickets. [R. 219.]

Petitioner's Tenth Question. Re Yeast Patent.
(Petitioner's Br. pp. 61-64.)

This question is also misleading, incomplete, and not in accordance with the facts in this case.

The application for the third patent is not a divisional application. It is merely a continuation-in-part of the second application. No mention whatever is made in the question of:

(1) that claims directed to the activation of yeast were inserted by amendment in the application which matured into the first patent. [R. 2574.] The Patent Office objected to the addition of the claims on the ground that yeast was not an ordinary food and hence the claims were for new matter. No appeal was taken, and the petitioner cancelled the claim, though petitioner contends that yeast is "an organic substance of dietary value," covered by the first patent in suit, and asserts that respondent is infringing that claim;

(2) that Hess in July, 1927, published his discovery of the activation of yeast and gave it freely for the benefit of rachitic children, without seeking a monopoly profit;

(3) that in 1928 Fleishmann obtained a license from petitioner to irradiate yeast;

(4) that the yeast tablet claim was voluntarily withdrawn in 1932 and that no attempt whatever was made to insert the claims in the application which matured into the second patent in suit, and

(5) the six year delay between the time that a claim directed to activated yeast or a process of activating yeast was cancelled from one application and presented in another application.

In other words, although Steenbock successfully irradiated yeast prior to June 30, 1924, the yeast patent did not issue until October, 1936,—more than twelve years later. Furthermore, although petitioner granted Fleishmann a license to irradiate yeast in 1928, no claim directed to the activation of yeast was pending in any application from 1926 to 1932.

As stated in the majority opinion at R. 3339:

> "In the vernacular of a not remote past, the profitable antirachitic yeast was an 'ace-in-the-hole' in the hand dealt when the discovery was made in 1924, but held until the showdown at the third application, eight years later."

The facts in this case, as outlined in the majority opinion [R. 3338-3340] and above, come squarely within the cases quoted in the majority opinion [R. 3338-3340], namely, *Webster Electric Co. v. Splitdorf Electric Co.*, 264 U. S. 463; *Woodbridge v. United States*, 263 U. S. 50, and *Wirebounds Patents Co. v. Saranac Automatic Machine Corp.*, 65 F. (2d) 904, 905. In the latter case, after discussing the above-mentioned cases of this Court and *Chapman v. Wintroath*, 252 U. S. 126, the Court stated at page 906:

> "The rationale of these three cases is that if the inventor, intentionally or by reason of culpable neglect, be guilty of action which unduly postpones the time when the public would be entitled to the free use

of the invention, and thus defeats the policy of the patent law, the right to a patent will be lost."

The cases cited by the petitioner are not in point.

In *Overland Motor Co. v. Packard Motor Co.*, 274 U. S. 417, the Court answered the question "Did the applicant, in cancelling the claim which was finally rejected on May 20, 1911, abandon such claim or estop himself from thereafter seeking it through a new application?" in the negative. In that case, the divisional application was filed within four months after the claims were cancelled from the first application, and no product embodying the subject matter of the claims appeared on the market until the patent issued,—an entirely different factual situation. In this case, as set forth above, there was a delay of six years in presenting claims directed to activated yeast or a process of activating yeast to the Patent Office, and petitioner granted Fleishmann a license to activate yeast almost four years before the process claim was again presented to the Patent Office.

In *Crown Cork Co. v. Gutman Co.*, 304 U. S. 159, 160, this Court merely decided the question, "Does this Court's decision in *Webster Co. v. Splitdorf Co.* (264 U. S. 463) mean that, even in the absence of intervening adverse rights, an excuse must be shown for a lapse of more than two years in presenting claims in a divisional application regularly filed and prosecuted in accordance with patent office rules?" in the negative. That question is entirely different than the question presented by the facts in this case.

We respectfully submit that the petitioner has been guilty of gross laches with respect to this matter, and that

the following statement in the majority opinion, after a discussion of the facts, sets forth the logical application of the law to the facts [R. 3340]:

> "The Supreme Court has held that such laches deprives one of his right to a patent, and what it has said applies *a fortiori* to withholding the use of a simple remedy for the widely prevalent affliction of rickets among children."

Alleged Divergence of Views Expressed in Opinions of the Circuit Court of Appeals.

There is no basis for the petitioner's contention that the petition for certiorari should be granted because of the divergence of opinion expressed in the opinions below.

Even though the petitioner's contention in this respect was correct, it would still not warrant the grant of the writ of certiorari.

With respect to the first and second questions presented, all three judges concurred in holding "that such refusal to permit such irradiation (of oleomargarine) warrants the refusal of the equitable injunctive and accounting relief sought by the corporation, though we hold the public interest is served better by our decision that the patents are invalid." [R. 3485.]

With respect to the third and fourth questions presented, it cannot fairly be said that Judge Healy disagreed with the majority opinion on either of these questions, as the petitioner contends. It is true that Judge Healy said:

> "* * * Further, it appears to me doubtful that the claims are fairly subject to the criticism that they broadly include a monopoly of the use of sunlight. * * *" [R. 3341-3342.]

But it must also be remembered that Judge Healy said [R. 3345, 3346]:

> "* * * It must be remembered that sunlight by its own inherent process activates the vitamin D principle in both inert and living tissues and substances, albeit, because of unfavorable atmospheric conditions, sunlight is not effective in all cases. *Nevertheless it is clear that the artificial process differs in no essential particular from the natural one.* The intervention of the mercury vapour lamp—developed long prior to Steenbock—may adapt the natural process to wider fields, but in a patentable sense the process itself is as ancient as the sun. * * *" (Italics added.)

With respect to the fifth and sixth questions presented, it is true that Judge Healy expressed some doubt as to whether the claims should be held invalid because lacking in particularity in respect of the period of exposure. Judge Healy assumed that Steenbock discovered and sufficiently disclosed in his claims the most effective period of exposure, which assumption was incorrect. However, as set forth in the above-quoted portion of his opinion, Judge Healy held that nevertheless such a discovery would not amount to a patentable invention.

With respect to the seventh, eighth, ninth and tenth questions presented, petitioner admits that the three judges substantially concur in answering said questions.

From the above, it is apparent that there is little divergence of views expressed in the opinions below and that there is no basis whatever for the petitioner's contention in this respect.

Re Pages 12-29 of Petitioner's Brief.

Many of the statements in this part of the petitioner's brief in the sections entitled "Introduction," "Dr. Steenbock's Background in Contract With That of Other Investigators," "Advent of Dr. Steenbock's Inventions," "The Patents in Suit," "Public Benefits," and "Petitioner's Administration of the Patents in Suit" are immaterial, inaccurate, and misleading. To point out all of the immaterial portions, misstatements and inaccuracies would only serve to unduly lengthen this brief. We shall therefore only briefly consider some of the matters in the section entitled "Dr. Steenbock's Background in Contrast With That of Other Investigators."

Dr. Steenbock, prior to June, 1924 (Steenbock's alleged date of conception is October, 1923) was not recognized by the authors of published articles on rickets and ultra violet light as a contributor to the investigations relating to the mode of action of ultra violet rays or the cure and prevention of rickets.

Respondent's Exhibits No. E-1 (July, 1910), to No. E-23 (Oct. 1924), inclusive, are published articles that deal with vitamins, rickets, sunlight and artificially produced ultra-violet light. Dr. Steenbock's name is not referred to in any of the above exhibits. In Respondent's Exhibit No. E-18 (Jan. 1923), "The Etiology of Rickets," by Edwards A. Park, Department of Pediatrics, Yale University School of Medicine, Dr. Park reviews the field of rickets starting with Glisson in 1650, up to the time of publication. Dr. Park refers to 140 published

articles dealing with rickets, ultra violet light and related subjects. No reference is made to Dr. Steenbock or any of his publications.

Judge Healy correctly characterized Steenbock's work as follows [R. 3344]:

> "Steenbock was familiar with this experiment. (Referring to the work of Hume and Smith.) After studies and experiments of his own he became convinced that the improvement in the condition of the rats was attributable, not to the irradiation of the air, but to the irradiation and consequent activation of the sawdust, which is edible to rats. In other words, Steenbock accurately interpreted the results of Hume and Smith's experiments, the significance of which the latter themselves failed to comprehend.
>
> "In the same year Goldblatt and Soames published an account of another experiment, with which, also, Steenbock was familiar. They irradiated live rats with a quartz mercury vapour lamp, after which the livers were removed and fed to rachitic rats, with resultant marked improvement in growth. Thus by these scientists as well as by Hume and Smith the actual process of irradiating edible substances with the mercury vapour lamp had already been practiced. There had been, besides, other practices of natural or artificial irradiation of dietary substances, some of which are mentioned in the main opinion. I think, therefore, that Steenbock cannot fairly be said to be the originator of the process. His contribution to the art lies, rather, in his interpretation of the results that may be achieved by the process. * * *" (Parenthesis added.)

Summary.

Summarizing briefly, respondent submits:

1. Questions 1 and 2 with respect to the misuse of the patents are not properly presented in this case, in that the Circuit Court of Appeals did not base its decision on that ground.

2. Even though the Court had based its decision on the misuse of the patents, the Court would merely have been following the principle established in many recent decisions of this Court.

3. Even though the Court had based its decision on the misuse of the patents, the petition should still be denied, in that with respect to the remaining questions this case is an ordinary patent infringement case with the usual issues in patent infringement litigation of anticipation and invention, and there is no conflict of decision with respect to the pettioner's patents between two Circuit Courts of Appeal.

4. Even though the Court had based its decision on the misuse of the patents, the petition should still be denied as to the other questions presented, and a decision on the first and second questions alone would not entitle the petitioner to prevail since the Court held that the patents are invalid.

5. Since this is otherwise an ordinary patent infringement case, the fact that the petitioner has misused its patents should not be the basis of giving it another hearing on matters peculiar to this controversy.

6. Any divergence of views expressed in the majority and minority opinions of the Circuit Court of Appeals does not warrant the grant of certiorari.

7. The case does not involve any principle which is of importance to the public, other than the questions with respect to the misuse of the patents, and the Court did not base its decision on that ground.

8. There is no merit in the petitioner's contention that the decision in this case conflicts with previous decisions of this Court.

9. The first patent was found invalid on several grounds, in fact, in order to prevail on the first patent, each and every one of the first nine "Questions Presented" by the petitioner must be answered in accordance with the petitioner's contentions.

10. The third, fourth, seventh, eighth and ninth questions presented are merely questions of fact. No question of law is presented in any of said questions.

11. The claims of the patent are invalid because anticipated by immemorial agricultural and horticultural processes and the prior art.

12. The claims of the first two patents are invalid because of indefiniteness of the area of the claimed monopoly.

13. The principle of the *General Electric Co. v. Wabash Appliance Corp.*, 304 U. S. 364, and *United Carbon Co. v. Binney & Smith*, 317 U. S. 228, cases is applicable to process claims as well as product claims.

14. The yeast patent is invalid because of laches.

15. There is little divergence of opinion expressed in the opinions of the Circuit Court of Appeals.

Conclusion.

In conclusion it is respectfully submitted that the decision of the Circuit Court of Appeals, here involved, has correctly decided all issues presented in the case, that the petitioner has no ground for writ of certiorari, and that the petition for writ of certiorari should be denied.

Respectfully submitted,

R. WELTON WHANN,
ROBERT M. MCMANIGAL,
Attorneys for Respondent.

Los Angeles, California, May 24, 1945.

Service of the within and receipt of a copy thereof is hereby admitted this.....day of May, A. D. 1945.

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Earl

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